HITACHI

Inspire the Next

SERVICE MANUAL

PA	No. 0219

42HDX62A/DW1-UA
42HDT52A/DW1-UA
42HDS52A/DW1-UB

NTSC	DW1-U Chassis

R/C: CLU-3851WL / CLU-3852WL

This ADDENDUM is made due to the new models 42HDX62A (DW1-UA), 42HDT52A (DW1-UA) and 42HDS52A (DW1-UB). They are different to models 42HDX62 (DW1-UA), 42HDT52 (DW1-UA) and 42HDS52 (DW1-UB). The Main difference is that "without A" Models use "A2" Plasma Panel and "with A" Models use "A3" Plasma Panel. Software (Digital Main PWB) is also different because of Plasma Panel difference. Dimensions of both Family Models are SAME.

Refer to Service Manual PA0208 ("without A" Models) when service "with A" Models. All Adjustments are same. This ADDENDUM indicates only the Differences, Updates and Special Considerations to be taken when Servicing either Models.

CONTENTS

SPECIFICATIONS 2
PARTS LISTS UPDATE AND DIFFERENCES (Digital Sub PWB) 2
DIGITAL SUB PWB LAYOUT DIFFERENCES (P#JA05978 & P#JA06422) 3
PARTS LISTS UPDATE AND DIFFERENCES (Terminal PWB) 5
PARTS LISTS UPDATE AND DIFFERENCES (A2 & A3 Panels, Miscellaneous) 6
LOCATION OF DIFFERENCE PARTS 7

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Before servicing this chassis, it is important that technician read the “IMPORTANT SAFETY INSTRUCTIONS” in Service Manual PA0208 ("without A" Models).

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a ⚠ on the schematics and on the parts list in Service Manual 0208 ("without A" Models) . Before servicing the chassis, it is important that the service technician read and follow the “Important Safety Instructions” shown in Service Manual PA0208 ("without A" Models).

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

PLASMA DISPLAY PANEL

APRIL 2006 **HHEA-MANUFACTURING DIVISION**

SPECIFICATIONS

Model	Panel
42HDX62 / HDT52 / HDS52	A2
42HDX62A / HDT52A / HDS52A	A3

Model	Indicated Value		Average Rating (W)	PST(W)		Chassis	TV Guide
	Maximum Ratings			w/out POD less than	w/POD less than 1W		
	(W)	(A)					
42HDX62 / HDX62A	370	3.3	236	0.5	14	DW1-UA	Yes
42HDT52 / HDT52A						DW1-UA	Yes
42HDS52 / HDS52A						DW1-UB	No

PARTS LIST UPDATE AND DIFFERENCES (Digital Sub PWB)

Refer Service Manual PA0208 for complete Parts List. Below Table shows UPDATED and DIFFERENCES List.

SYMBOL	P#	DESCRIPTION	SYMBOL	P#	DESCRIPTION
		Digital Sub PWB P#JA05978			**Digital Sub PWB (Update list)**
CN31	AA01123R	CCC105K10-B-16CT			CAPACITORS
HN30	CZ01271R	REMOCON MODULE (RPM5538-H12)			
LN31	BA10986R	LB2012 CHIP COIL 47UH 50MA	CR478	0893179R	CAP. CHIP CERAMIC 100000 PF 16V
QN01	CA02091R	SRC1204EF_PF	C482	0893179R	CAP. CHIP CERAMIC 100000 PF 16V
QN02	CA02091R	SRC1204EF_PF			
QN03	CA02091R	SRC1204EF_PF			RESISTORS
RN03	0790001R	RES. CHIP REC JUMPER			
RN06	0790033R	RES. CHIP 1/16W 470 OHM	R493	0790044R	RES. CHIP 1/16W 3.3 KOHM
RN07	0790039R	RES. CHIP 1/16W 1.5KOHM	R494	0790044R	RES. CHIP 1/16W 3.3 KOHM
RN09	0790055R	RES. CHIP 1/16W 22KOHM	RLX01	0790026R	RES. CHIP 1/16W 150 OHM
RN33	0790024R	RES. CHIP 1/16W 100 OHM	RX10	0790019R	RES. CHIP 1/16W 47 OHM
			RX16	0790026R	RES. CHIP 1/16W 150 OHM
		Digital Sub PWB P#JA06422			MISCELLANEOUS
CN31	AA01123R	CCC105K10-B-16CT	JNM1	EY01772R	SD MEMORY CARD 500998-0900
HN30	CE00121R	SBX3050-02			
LN31	BA10986R	LB2012 CHIP COIL 47UH 50MA			
QN01	CA02091R	SRC1204EF_PF			
QN02	CA02091R	SRC1204EF_PF			
QN03	CA02091R	SRC1204EF_PF			
RN03	0790001R	RES. CHIP REC JUMPER			
RN06	0790033R	RES. CHIP 1/16W 470 OHM			
RN07	0790039R	RES. CHIP 1/16W 1.5KOHM			
RN09	0790055R	RES. CHIP 1/16W 22KOHM			
RN11	0790001R	RES. CHIP REC JUMPER			
RN12	0790001R	RES. CHIP REC JUMPER			
RN33	0790024R	RES. CHIP 1/16W 100 OHM			

A) There are 2 Digital Sub PWB P#'s, use indicated parts for each PWB. Digital Sub PWB P#JA06422 is the latest PWB P# isued to All 42" Family Models. Differences includes change location of above components: inverse location from Component Side to Solder Side and viceversa. See next pages for reference.

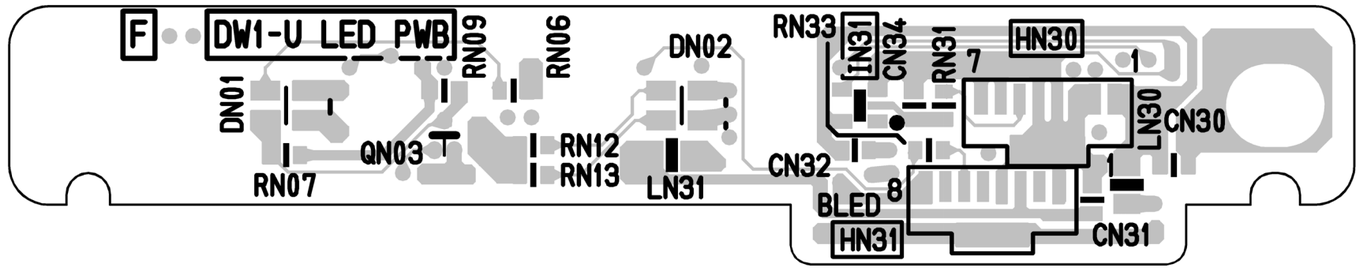
B) R493 & R494 added instead of C477 (P#0893115R) and C478 (P#0893115R) as a C/M for I2C Improvement on PWB P#8. For PWB P#JA00622 already layout was modified to include R493 & R494 locations.

C) "RLX01" (150 ohm) added instead of "LX01" and "RX10" (47 ohm) added instead a Jumper (P#0790001R). These modificationts were for FCC Improvement.

D) "JNM1" was changed to P#EY01772R from P#EY01771R for Improvement. Both P#'s can be used.

DW1-U LED PWB (Included on Digital Sub PWB, P#JA05978)

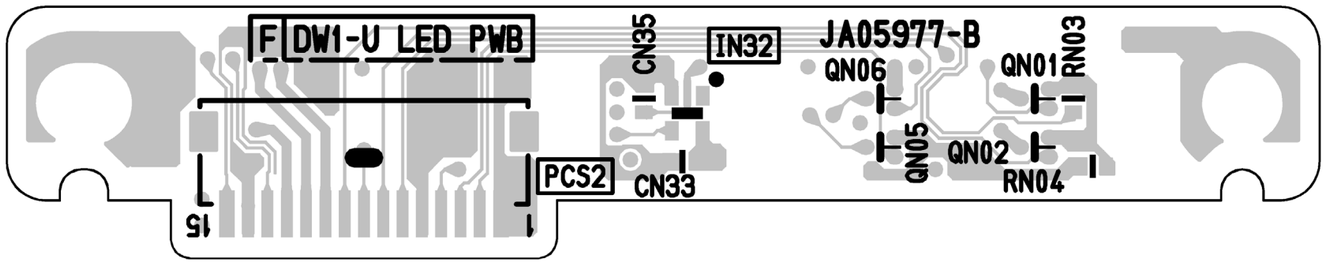
(Component side)



Component side

IC	DIODE
IN31	DN01 DN02 HN30 HN31
TRANSISTOR	
QN03	

(Solder side)

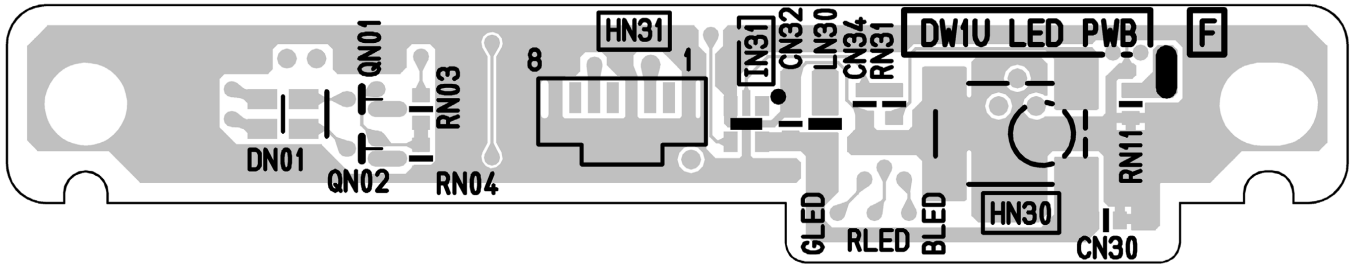


Solder side

IC
IN32
TRANSISTOR
QN01 QN02 QN05 QN06

DW1-U LED PWB (Included on Digital Sub PWB P#JA06422)

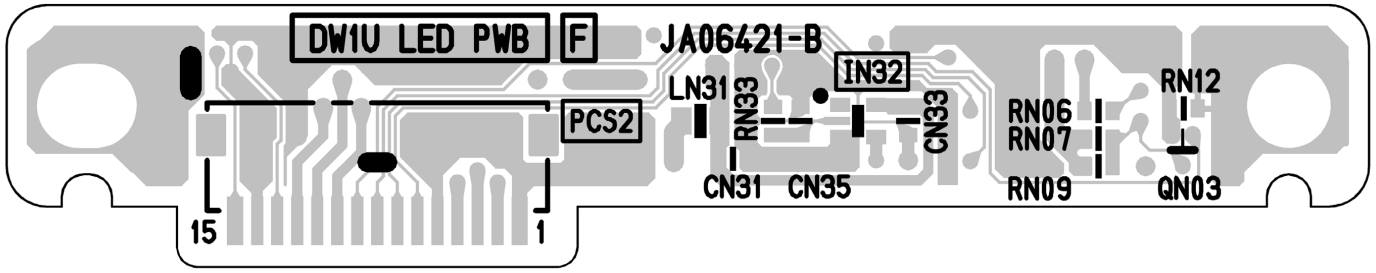
(Component side)



Component side

IC	DIODE
IN31	DN01 HN30 HN31
TRANSISTOR	
QN01 QN02	

(Solder side)



Solder side

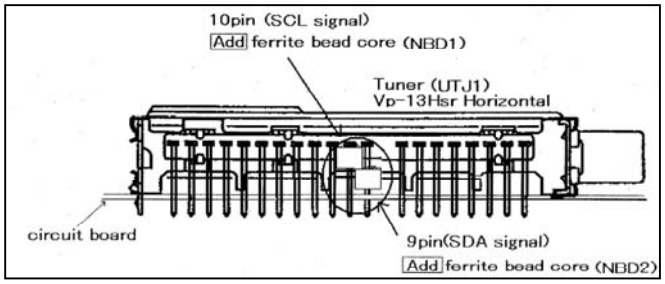
IC
IN32
TRANSISTOR
QN03

PARTS LIST UPDATE AND DIFFERENCES (Terminal PWB)

Refer Service Manual PA0208 for complete Parts List. Below Table shows UPDATED and DIFFERENCES List.

SYMBOL	P#	DESCRIPTION
		TERMINAL PWB
		CAPACITORS
CRR31	0893222R	CAP. CERAMIC CHIP 10000 PF 50V 1608
		COILS
NBD1	2771893	FERRITE BEADS CORE (005)
NBD2	2771893	FERRITE BEADS CORE (005)
		FILTERS
XTJ2	BK00191R	CHIP CERAMIC FILTER NFL21SP506
XTJ3	BK00191R	CHIP CERAMIC FILTER NFL21SP506
		RESISTORS
R181	0790001R	CHIP RESISTOR JUMPER
		MODULES
H101	CZ01241	GP1FM514TZ0F
		CONNECTORS
ESW	EF24711	8J VH-SDNX2 CONN. 350MM
		MISCELLANEOUS
N101	NA75382	DW1 TERMINAL SUPPORT METAL
ZPL	9413926W	SILICON RUBBER

Location for "NBD1" & "NBD2" Ferrite Beads and Silicon "ZPL" (Analog Tuner)



Part Numbers for Panel Boards

Part Number	Description
FPF29R-ABL0030	ABUS-L PWB
FPF29R-ABR0031	ABUS-R PWB
FPF29R-LGC0057	LOGIC PWB
FPF29R-XSS0037	X-SUS PWB
FPF29R-YSS0038	Y-SUS PWB
FPF42C128128UE5	Panel
HA01575	POWER UNIT

A) "RR31" was eliminated and added "CRR31" in same location. Related to Countemeasure of EMI Test.
B) NBD1 & NBD2 were issued as running change, to improve I2C line Communication between Tuner and Micon.
C) "XTJ2" and "XTJ3" were changed from P#BK00213R to P#BK00191R for improve of EMI Filter.
D) "R181" appears twice on Service Manual PA0208, so correct value is indicated above (Jumper Chip Resistor).
E) "H101", for Update List only.
F) "ESW" is only for Update List.
G) "N101" was changed from P#1 to P#2 as Countermeasure of Avoid Friction between PWB and Metal Support.

PARTS LIST UPDATE AND DIFFERENCES (Plasma Panels and Miscellaneous Parts)

Refer Service Manual PA0208 for complete Parts List. Below Table shows UPDATE and DIFFERENCES List.

SYMBOL	P#	DESCRIPTION	SYMBOL	P#	DESCRIPTION
		SPEAKERS			ACCESSORIES
SPB	GM01631	SPU DW1-U 42BTM SP	ESWVL	EW08431	8P PLUG CODE L=150MM (No "A" models)
SPL	GM01623	SPU DW1-U 42 SP L (HR)	ESWVL	EW08432	8P PLUG CODE L=165 MM ("A" Models)
SPR	GM01624	SPU DW1-U 42 SP R (HR)	N01	QR64864	42HDS52/52A INSTRUCTION BOOK #2
			N01	QR64865	42HDT52/52A INSTRUCTION BOOK
		PANEL ALLOCATION	N01	QR64866	42HDX62/62A INSTRUCTION BOOK
			U01	HL02065	REM. CONTROL CLU-3851WL(HDX/HDT)
		A2 Panel (42HDX62/HDT52/HDS52)	U01	HL02066	REM. CONTROL CLU-3852WL(HDS)
			U02	HL01864	SIMPLE REM. CONTROL CLU123S (HDX)
A01	DD00671K	Panel FPF42C128128UD-55			
A01 (C)	DD00672K	Panel FPF42C128128UD-85			
A02 (C)	TS06021	Logic Board (FPF28R-LGC45H)			
A03 (C)	TS06022	Logic Cover (FPF28R-PSP010)			
U1 (D)	HA01571	Power Supply (LSEP1198A1HB)			P.W.B.
#172	MN08181	DW1 42" Power Barrier			
A21	JP08531	PSA DW1-U Main Dig. PWB (HDX/HDT)	A21	JP08531	DW1-U Main Dig. PWB (HDX62/HDT52)
A22	JP08532	PSA DW1-U Main Dig. PWB (HDS)	A22	JP08532	DW1-U Main Dig. PWB (HDS52)
			A21	JP08535	DW1-UE Main Dig. PWB (HDX62A/HDT52A)
		A3 Panel models ("With A" Models)	A22	JP08536	DW1-UF Main Dig. PWB (HDS52A)
A01	DD00722K	Panel FPF42C128128UE-85	A11	JP08511	DW1-U Digital Sub PWB (All 42" Models)
A02	TS06293	Logic Board (FPF29R-LGC0057)	A21	JP08521	DW1-U Terminal PWB (All 42" Models)
U1 (D)	HA01573/4/5	Power Supply (LSEP1198A3 /A4 / A5HB)			
#175	NA77551	DW1 Power PWB Plate			
#176	MJ03598	Screw (5 pcs.) 3x8			
#222	NA79111	DW1 42" Barrier Metal			
#224	MS01241	HIMERON 22X595X1			
#226	MJ03895	Screw (2 pcs.) 4x10			
A21	JP08535	PSA DW1-UE Main Dig. PWB (HDX/HDT)			
A22	JP08536	PSA DW1-UF Main Dig. PWB (HDS)			
#126	ME04531	DW1 Flex Barrier			

A) Previous Speakers P#'s are as shown in Service Manual PA0208, Pag.138. Above Speakers are common and latest P#'s used on All 42" Models.

B) Panel "A01" (A2 Panel) , P#DD00671K used on Start of production, includes Logic Board.

C) Panel "A01" (A2 Panel) , P#DD00672K used on mayor production of "No A" models, with separated Logic Board ("A02", P#TS06021) & Logic Cover ("A03", P#TS06022), assembly porpouse only. These 3 Part #'s must be used together.

D) Power Supply differential points are :

P#HA01571: Original Part ("Without A" models only).
P#HA01573: Original Part (since first production: V5JXXXXXX production , "With A" models).
P#HA01574: Add Shut Down Countermeasure (V5KXXXXXX production, "With A" models).
P#HA01575: Add Antenna Discharge Test Countermeasure (V5LXXXXXX onwards, "Whit A" models).

Service Dept. must order P#4 & P#5, for a better performance of TV set. Antenna Discharge C/M is not a serious issue.

E) "#126" part added to "Without A" models on last production lots. For "With A" models, it applies since start of production. It's for isolate LED PWB, to avoid any possibility of contact with other metals, not a serious issue.

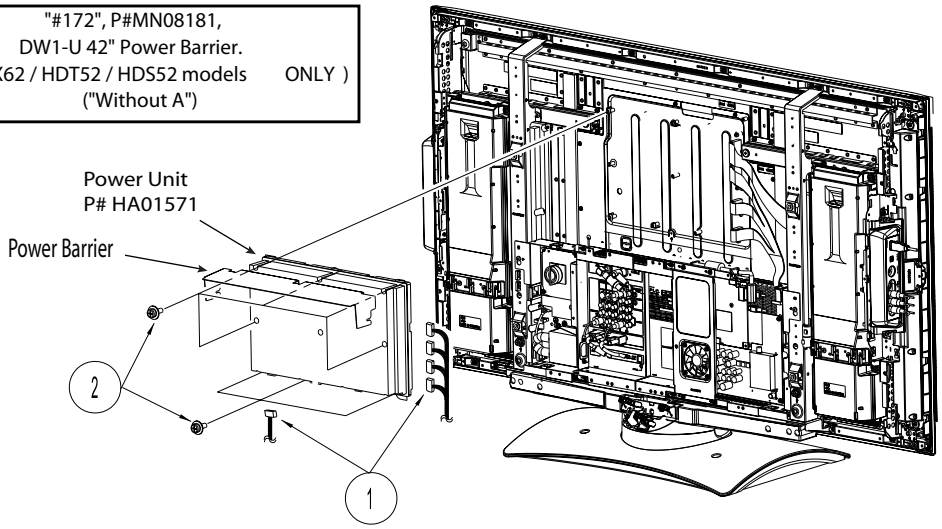
F) ESWVL is difference because of Improve length on "With A" Models , but it can be applied to both Family Models (P#2).

G) Digital Main PWB are different P#'s because of 2 Main Reasons:

1) Plasma Panel Difference, Software is different
2) HDX/HDT Models have TV Guide and HDS Models doesn't.

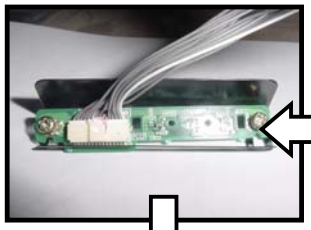
LOCATION OF PARTS (for Plasma Panel & Miscellaneous Parts).

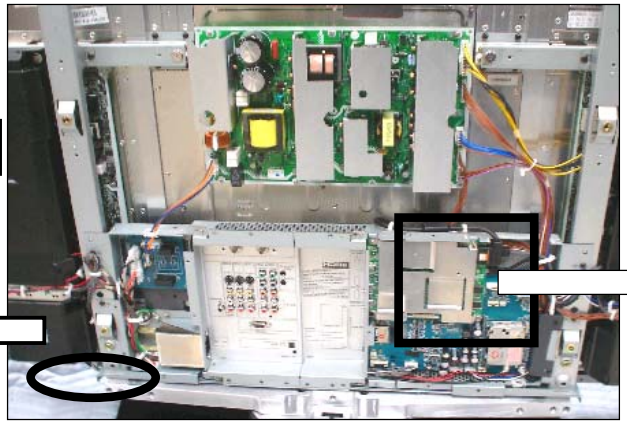
"#172", P#MN08181,
DW1-U 42" Power Barrier.
(42HDX62 / HDT52 / HDS52 models ONLY)
("Without A")



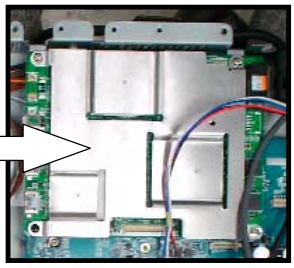
PLASMA 42", DW1-U, BACK VIEW

LED PWB & "#126", P#ME04531,
DW1 Flex Barrier.





"A21"/"A22" DIGITAL MAIN PWB



"#126", P#ME04531 DW1 Flex Barrier

ABOUT IDENTIFICATION OF MAIN DIGITAL PWB ASS'Y P#:

CHECK LETTER MARK TO IDENTFY
MAIN DIGITAL PWB ASS'Y P#

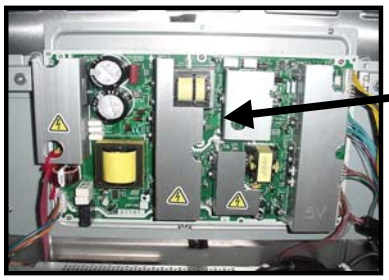
If the corresponding model has a P# different as shown below, apply correct Main Digital P#.

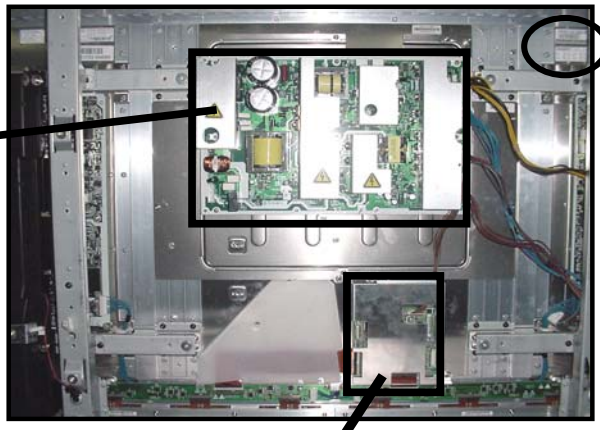
MODEL	P#	Letter Code	Description
42HDX62	JP08531	A	DW1-U MAIN DIG.
42HDT52	JP08531	A	DW1-U MAIN DIG.
42HDS52	JP08532	B	DW1-U MAIN DIG.
42HDX62A	JP08535	E	DW1-UE MAIN DIG.
42HDT52A	JP08535	E	DW1-UE MAIN DIG.
42HDS52A	JP08536	F	DW1-UF MAIN DIG.

LOCATION OF PARTS (for Plasma Panel & Miscellaneous Parts).

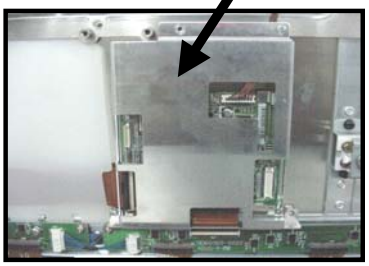
PLASMA 42", DW1-U, BACK VIEW (w/out VIDEO BLOCK)

"U1" POWER UNIT



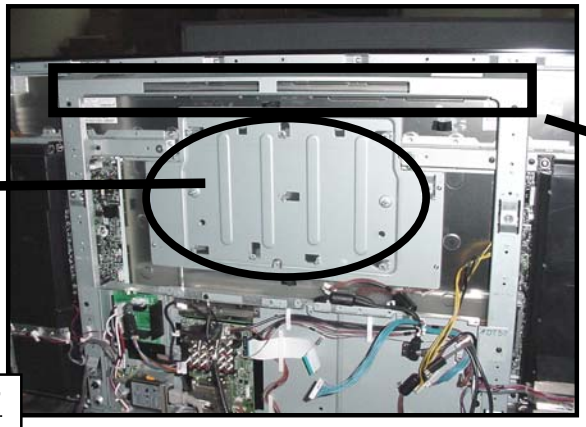


"A01" PANEL DESCRIPTION

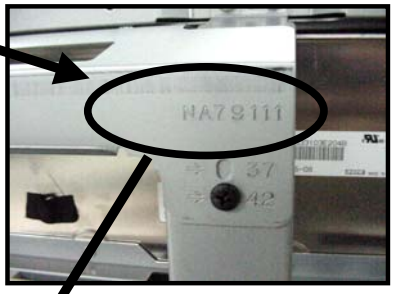


"A02" LOGIC BOARD & "A03" LOGIC COVER
("Without A" Models ONLY)

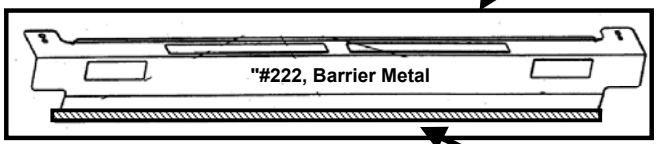
PLASMA 42", DW1-U, BACK VIEW



"#222", P#NA79111, DW1 42" Barrier Metal, requires 2 pcs. of Screw "#226", P#MJ03895 & "#224", Himeron Sheet
(**"With A" models only**)



"#175", NA77551, DW1-U Power PWB Plate, requires 5pcs of Screws "#176", P#MJ03598.
("With A" models only)



"#224", Himeron Sheet

HITACHI

HITACHI

Inspire the Next

Service Manual

PA | **No. 0208**

42HDX62/DW1-U
42HDT52/DW1-U
42HDS52/DW1-U

Revision History

Change Number	Date of Change	Page numbers changed	Description of change
1	2006.01.06	139	Corrected model number description for digital modules
2	2006.04.14	138	Added part numbers for panel boards
3	2006.04.20	78	Replaced connection diagram
4	2006.05.18	22	Changed verbiage concerning RS-232 connection
5	2006.06.07	138	Corrected part numbers, CH 2 combined with CH 5
6	2006.10.19	39	Removed the Term Magic Focus from Deliver Condition Table
7	2006.05.03	29	Changed text Increase > Decrease

HITACHI

Inspire the Next

SERVICE MANUAL

PA

No. 0208

42HDX62/DW1-U
42HDT52/DW1-U
42HDS52/DW1-U

NTSC

DW1-U Chassis

R/C: CLU-3851WL

TO GO TO A CHAPTER, CLICK ON ITS HEADING BELOW

CONTENTS

SAFETY PRECAUTIONS 2
PRODUCT SAFETY NOTICE 3
SERVICING PRECAUTIONS 4
AGENCY REGULATORY INFORMATION 9
ACKNOWLEDGMENTS AND TRADEMARKS 10
INTRODUCTION 11
SPECIFICATIONS 12
BASIC SETUP & OPERATION . . . . . 16 updated 05.18.06
ADJUSTMENTS . . . . . 28 updated 05.03.07
TROUBLESHOOTING FLOWCHARTS . . . . . 70 updated 10.19.06
BLOCK DIAGRAMS 75
CONNECTION DIAGRAMS . . . . . 78 updated 04.20.06
FINAL WIRING DIAGRAM 79
QUICK DISASSEMBLY GUIDE 81
FINAL ASSEMBLY GUIDE 88
WAVEFORMS 95
DC VOLTAGES 98
CIRCUIT SCHEMATIC DIAGRAMS 99
PRINTED CIRCUIT BOARDS 118
PARTS LIST . . . . . 128 updated 06.07.06
QUICK REFERENCE PARTS LIST . . . . . 139 updated 01.04.06

CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Before servicing this chassis, it is important that the service technician read the “IMPORTANT SAFETY INSTRUCTIONS” in this service manual.

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a ⚠ on the schematics and on the parts list in this Service Data and its supplements and bulletins. Before servicing the chassis, it is important that the service technician read and follow the “Important Safety Instructions” in this Service Manual.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

PLASMA DISPLAY PANEL

AUGUST 2005
version 0208.07

HHEA-MANUFACTURING DIVISION

SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety-related notes located on or inside the cover case and on the chassis or plasma module.

WARNING: Since the chassis of this receiver is connected to one side of the AC power supply during operation, whenever the receiver is plugged in service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of receiver.

1. When service is required, an isolation transformer should be inserted between power line and the receiver before any service is performed on a "HOT" chassis receiver.

2. When replacing a chassis in the receiver, all the protective devices must be put back in place, such as barriers, non-metallic knobs, insulating cover-shields, and isolation resistors, capacitors, etc.

3. When service is required, observe the original lead dress.

4. Always use manufacturer's replacement components. Critical components as indicated on the circuit diagram should not be replaced by another manufacturer's. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of over heating.

5. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the receiver by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

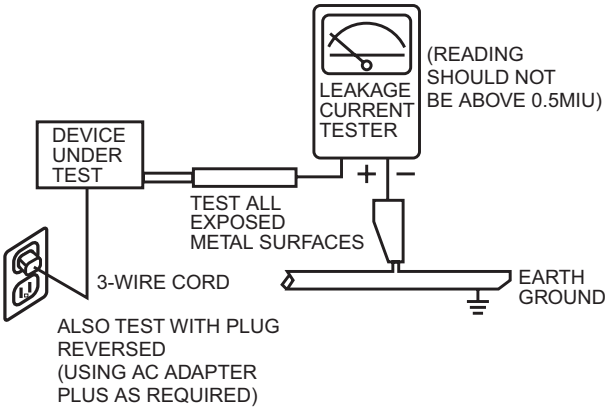
With the AC plug removed from the 120V AC 60Hz source, place a jumper across Line 1 and Line 2 of the three plug prongs, do not connect with the third prong, which is physical ground.

Using an insulation tester (DC500V), connect one of its leads to the AC plug jumper and touch with the other lead each exposed metal part (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis should have a resistor reading over 4MΩ. Any resistance value below this range indicates an abnormality which requires corrective action. An exposed metal part not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with the American National Standards Institute (ANSI) C101.0 Leakage Current for Appliances. In the case of the PDP monitor set the AC switch first in the ON position and then in the OFF position, measure from across Line 1 and Line 2 of the three plug prongs, do not connect with the third prong, which is physical ground, to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 MIU. Reverse the instrument power cord plug in the outlet and repeat test.

AC LEAKAGE TEST



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE RECEIVER TO THE CUSTOMER.

AC Inlet Polarity

This check is based on the UL Standard

Use the jigs specified by the production technology section.

The GND side (Wider blade) of the AC power cord should be connected to F902.

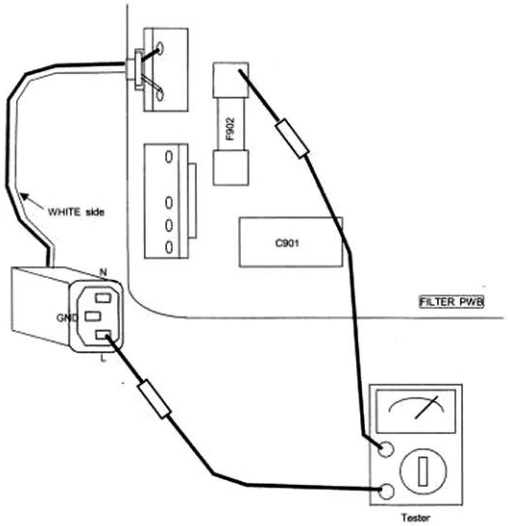


TABLE OF CONTENTS

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified with a ⚠ mark in the schematics and parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI-recommended replacement component, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of HITACHI Service Manuals may be obtained at a nominal charge from HITACHI Sales Corporation.

1. Follow the general caution recommendations from “Safety precautions” section.

42HDS52/HDT52/HDX62 - Plasma Monitor Unit
55HDS52/HDT52/HDX62 - Plasma Monitor Unit

1. Follow the general caution recommendations from “Safety precautions” section.
2. Since the Panel module and front filter are made of glass, sufficient care shall be taken when handling the broken module and filter in order to avoid injury.
3. If necessary to replace Panel module, this work must be started after the panel module and the AC/DC Power supply becomes sufficiently cool.
4. Special care must be taken with the display area to avoid damaging its surface.
5. The Panel Module shall not be touched with bare hands to protect its surface from stains.
6. It is recommended to use clean soft gloves during the replacing work of the Panel module in order to protect, not only the display area of the panel module but also the serviceman.
7. The Chip Tube of the panel module (located upper left of the back of the panel module) and flexible cables connecting Panel glasses to the drive circuitry Printed Wiring Boards (P.W.B.) are very weak, so sufficient care must be taken to prevent breaking or cutting any of these. If the Chip Tube breaks the panel module will never work, replacement for a new plasma panel module will be needed.
8. AV Digital Block, power supply and PDP driving circuit P.W.B.’s are assembled on the rear side of the PDP module, take special care with this fragile circuitry; particularly, Flexible Printed Circuits bonded to surrounding edges of the glass panel. They are not strong enough to withstand harsh outer mechanical forces. Avoid touching the flexible printed circuits by not only your hands, but also tools, chassis, or any other object. Extreme bending of the connectors must be avoided too. In case the flexible printed circuits are damaged, the corresponding addressed portions of the screen will not be lit and exchange of a glass panel will be required.

PDP Module Handling

When there is need to replace a broken PDP module which is the displaying device from the Plasma monitor unit, consider the following:

1. When carrying the PDP module, two persons should stand at both shorter-edge sides of the glass-panel and transport it with their palms. Avoid touching the Flexible Printed Circuits or the chip tube on the corner of the glass-panel. Handle only by the surface of the glass panel. In case of some PDP modules, electrode repair is done by connecting between regular terminal with Cu tape and Cu wire. Please do not hook and/or damage this repair line. If it is damaged, the module will not function unless the glass-panel is exchanged with a new glass-panel.
2. When carrying PDP module, watch surrounding objects, such as tables, and also do not carry it alone since it may be dangerous and it will be damaged due to excessive stress to the module (glass-panel).
3. Please do not stand the module with the edge of the glass-panel on the table since this might result in damage to the glass-panel and/or flexible printed circuits due to excessive stress to the module (glass-panel).

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health and Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with solder. Also, when soldering make sure you are in a well ventilated area in order to avoid inhalation of any smoke or fumes released.

SAFETY NOTICE
USE ISOLATION TRANSFORMER
WHEN SERVICING

POWER SOURCE

This plasma television is designed to operate on 120 Volts 60Hz, AC house current. Insert the power cord into a 120 Volts 60Hz outlet.

NEVER CONNECT THE PLASMA TELEVISION TO OTHER THAN THE SPECIFIED VOLTAGE OR TO DIRECT CURRENT AND TO 50HZ. TO PREVENT ELECTRIC SHOCK, DO NOT USE THE PLASMA TELEVISION’S (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE, OR THE OUTLETS UNLESS THE BLADES AND GROUND TERMINAL CAN BE FULLY UNSERTED TO PREVENT BLADE EXPOSURE.

SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this service data and its supplements and addenda, read and follow the "Important Safety Instructions" on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Guidelines

1. Always unplug the instrument AC power cord from the AC power source before:
   a. Removing or reinstalling any component, circuit board, module, or any other instrument assembly.

   b. Disconnecting or reconnecting any instrument electrical plug or other electrical connection.

   c. Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

   CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this instrument or any of its assemblies.

3. Unless specified otherwise in these service data, clean electrical contacts by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength).
   CAUTION: This is a flammable mixture. Unless specified otherwise in these service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket of voltage interlocks with which instruments covered by this service data might be equipped.

5. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat-sinks are correctly installed.

6. Always connect the test instrument ground lead to the appropriate instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

7. Use with this instrument only the test fixtures specified in this service data.
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this instrument.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or desolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES device.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range 500°F to 600°F.

2. Use an appropriate lead free solder (see page 8). Lead solder can be used, but there is a possibility of failure due to insufficient strength of the solder.

3. Keep the soldering iron tip clean and well-tinned.

4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.

5. Use the following desoldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

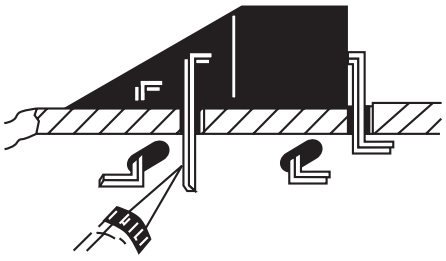
   b. Heat the component lead until the solder melts. Quickly draw away the melted solder with an anti-static, suction-type solder removal device or with solder braid.
      CAUTION: Work quickly to avoid overheating the circuit board printed foil.

6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

   b. First, hold the soldering iron tip and solder strand against the component lead until the solder melts.

   c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
      CAUTION: Work quickly to avoid overheating the circuit board printed foil or components.

   d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



Use Soldering Iron to Pry Leads

IC Removal/Replacement

Some Hitachi unitized chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.

2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.

2. Carefully bend each IC lead against the circuit foil pad and solder it.

3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to areas.)

"Small-signal" Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.

2. Bend into a "U" shape the end of each of the three leads remaining on the circuit board.

3. Bend into a "U" shape the replacement transistor leads.

4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact, then solder each connection.

Power Output Transistor Devices Removal/Replacements

1. Heat and remove all solder from around the transistor leads.

2. Remove the heatsink mounting screw (if so equipped).

3. Carefully remove the transistor from the circuit board.

4. Insert new transistor in circuit board.

5. Solder each transistor lead, and clip off excess lead.

6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.

2. Bend the two remaining leads perpendicularly to the circuit board.

3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.

4. Securely crimp each connection and solder it.

5. Inspect (on the circuit board copper side) the solder joints of the two "original leads". If they are not shiny, reheat them and, if necessary, apply additional solder.

Fuses and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of circuit board hollow stake.

2. Securely crimp leads of replacement component around stake 1/8 inch from top.

3. Solder the connections.
   CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board, to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board, causing the foil to separate from, or "lift-off," the board. The following guidelines and procedures should be followed whenever this condition is encountered.

In Critical Copper Pattern Areas

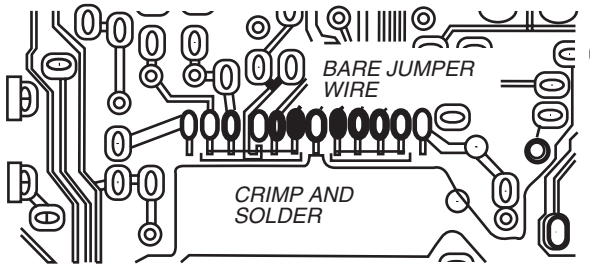
High component/copper pattern density and/or special voltage/current characteristics make the spacing and integrity of copper pattern in some circuit board areas more critical than in others. The circuit foil in these areas is designated as Critical Copper Pattern. Because Critical Copper Pattern requires special soldering techniques to ensure the maintenance of reliability and safety standards, contact your Hitachi personnel.

At IC Connections

To repair defective copper pattern at IC connections, use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections.)

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary.)

2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.



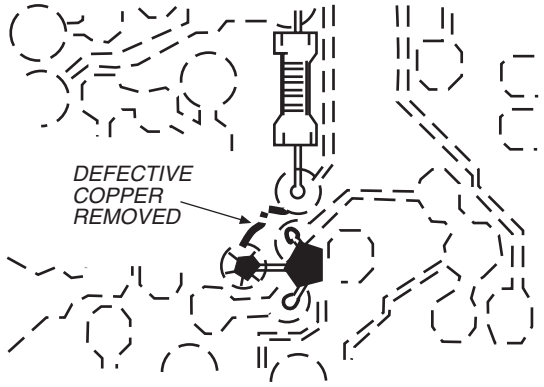
Install Jumper Wire and Solder

3. Bend a small "U" in one end of a small-gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.

4. Route the jumper wire along the path of the cut-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area, and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.



Insulated Jumper Wire

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure hazardous condition will not exist if the jumper wire opens.

2. Trace along the copper pattern from both wire sides of the pattern break and locate the nearest component directly connected to the affected copper pattern.

3. Connect insulated 20-gauge jumper wire from the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.
   CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

NOTE: ***These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.***

Leadless Chip Components (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chip capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitors may also be limited for the same reason. It is recommended that identical chip components be used. .

Chip resistors have a three digit numerical resistance code -1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6KΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either

common anode or common cathode. Check the parts list for correct diode number.

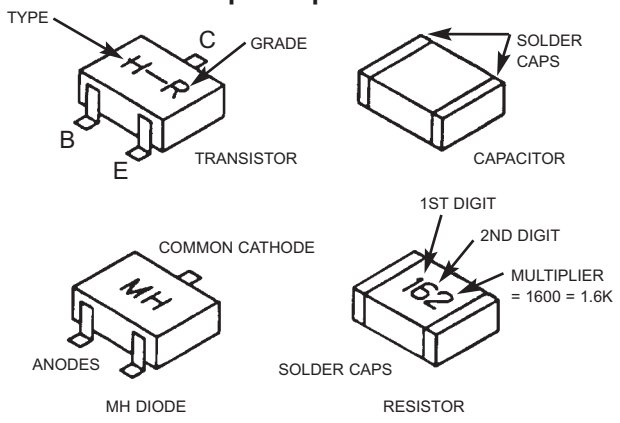
Component Removal

1. Use solder wick to remove solder from component end caps or terminals.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal .

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds

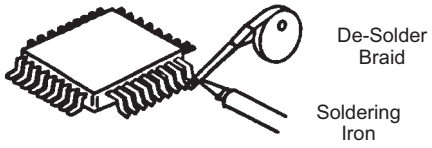
Chip Components



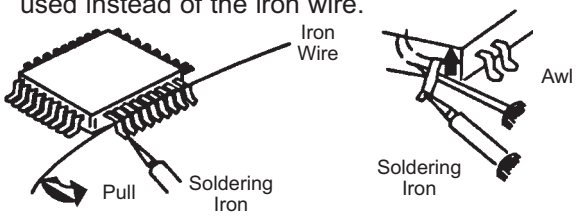
How to Replace Flat-IC —Required Tools—

- Soldering iron
- De-solder braids
- iron wire or small awl
- Magnifier

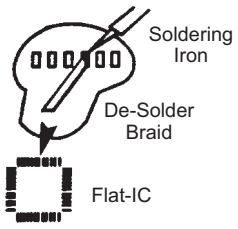
1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.



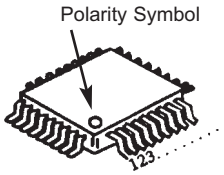
2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.



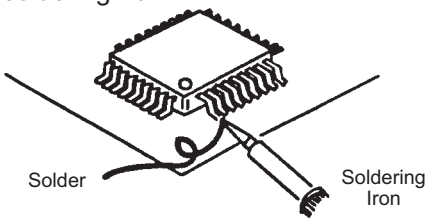
3. Remove the solder from all of the pads of the Fiat-IC by using a de-solder braid.



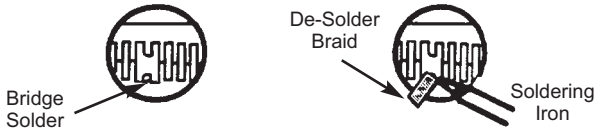
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol.



5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.



Information for service about lead-free solder introduction

Hitachi introduced lead-free solder to conserve the "Earth Environment".
Please refer to the following before servicing.

(1) Characteristic of lead-free solder

Melting point of lead free solder is 40-50°C higher than solder containing lead.

(2) Solder for service

Following composition is recommended.

" Sn - 3.0Ag - 0.5Cu " , or " Sn - 0.7 Cu "

Lead solder can be used, but there is a possibility of failure due to insufficient strength of the solder.

Caution when using solder containing lead.

Please remove previous solder as much as possible from the soldering point.
When soldering, please perfectly melt the lead-free solder to mix well with the previous solder.

(3) Soldering iron for lead-free solder.

Melting point of lead-free solder is higher than solder containing lead.
Use of a soldering tool "with temperature control" and "with much thermal capacitance" is recommended.
(Recommended temperature control : 320°C - 450°C)

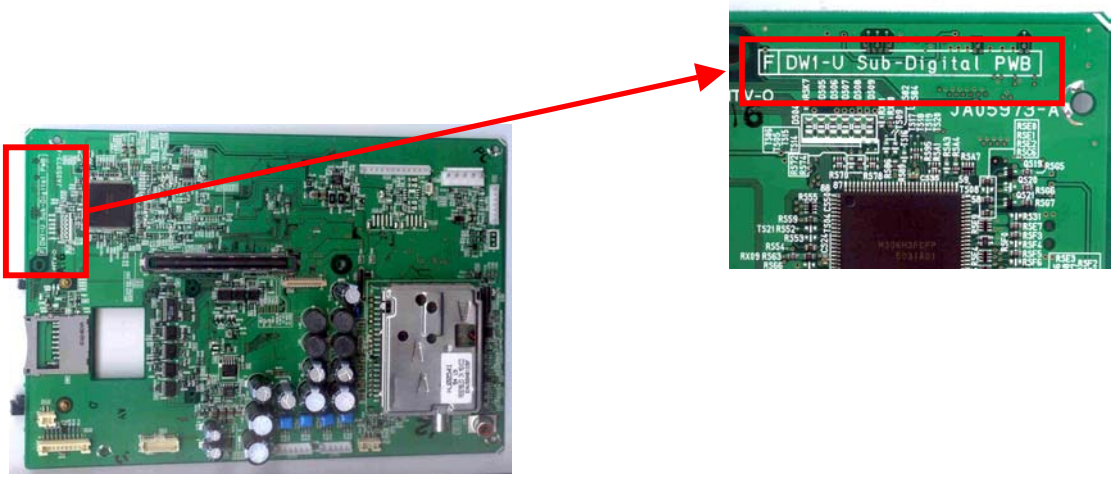
Recommended temperature

PWB with chip parts	320°C +/- 30°C
PWB without chip parts	380°C +/- 30°C
Chassis, metal, shield etc.	420°C +/- 30°C

(4) Identification of lead-free PWB

2003 models	>> not applied
2003 models	>> mixed
2004 models	>> lead-free solder is introduced
2005 models	>> lead-free solder apply

On lead-free PWB, "F" is added at the beginning of stamp on PWB. (e.g. F DW1)



AGENCY REGULATORY INFORMATION

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hitachi Home Electronics (America), Inc. may void the user's warranty.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Any cables that are supplied with the system must be replaced with identical cables in order to assure compliance with FCC rules. Order Hitachi spares as replacement cables.

Declaration of Conformity

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this declaration, contact:

Hitachi America, LTD.
Home Electronics Division
900 Hitachi Way
Chula Vista, CA 91914
Tel. 1-800-448-2244 (1-800-HITACHI)
ATTN: CUSTOMER RELATIONS

In the United States, TV GUIDE and other related marks are registered marks of Gemstar-TV Guide International, Inc. and/or one of its affiliates. In Canada, TV GUIDE is a registered mark of Transcontinental Inc., and is used under license by Gemstar-TV Guide International, Inc.

The TV Guide On Screen system is manufactured under license from Gemstar-TV Guide International, Inc. and/or one of its affiliates.

The TV Guide On Screen system is protected by one or more of the following issued United States patents 6,498,895; 6,418,556; 6,331,877; 6,239,794; 6,154,203; 5,940,073; 4,908,713; 4,751,578; 4,706,121.

Gemstar-TV Guide International Inc. and/or its related affiliates are not in any way liable for the accuracy or availability of the program schedule information or other data in the TV Guide On Screen system and cannot guarantee service availability in your area. In no event shall Gemstar-TV Guide International, Inc. and/or its related affiliates be liable for any damages in connection with the accuracy or availability of the program schedule information or other data in the TV Guide On Screen system.

ACKNOWLEDGMENTS AND TRADEMARKS

This Plasma Television complies with VESA DDC2B specifications, Plug & Play is a system with computer, peripherals (including monitors) and operating system. It works when the monitor is connected to a DDC ready computer that is running an operating system software that is capable for the plug & play.

When a Plug and Play PC is powered on, it sends a command to the Monitor requesting identification. The Monitor sends back a string of data including its characteristics.

TRADEMARK ACKNOWLEDGMENT

DDC™ is a trademark of Video Electronics Standard Association.
IBM PC/AT and VGA are registered trademarkds of International Business Machines Corporation of the U.S.A.
Apple and Macintosh are registered trademarks of Apple Computer, Inc.
VESA is a trademark of a nonprofit organization, Video Electronics Standard Association.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Cable Compatible Television Apparatus- Tèlèvision câblocompatible, Canada.

Notes on Closed Caption:
This Plasma Television receiver will display television closed captioning, (CC or), in accordance with paragraph 15.119 of the FCC rules.

TruBass and the SRS ® symbol are trademarks of SRS Labs, Inc. TruBass technology is incorporated under license from SRS Labs, Inc.

In the U.S. , TV GUIDE TV GUIDE and other related marks are registered marks of Gemstar-TV Guide International, Inc. and/or one of its affiliates. In Canada , TV GUIDE is a registered of transcontinental Inc. , and is used under license by Gemstar-TV Guide International, Inc.

INTRODUCTION

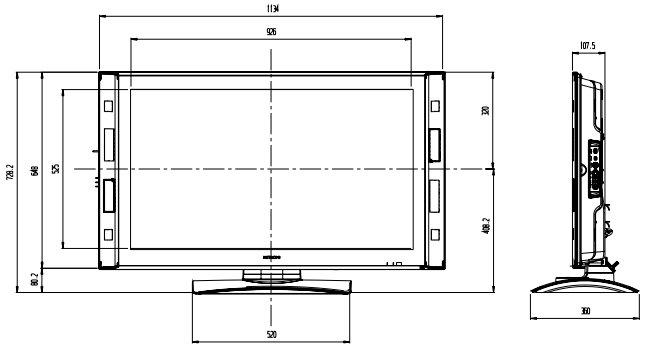
The Digital AV Block is inside of the Panel assembly controls most of the user functions of the complete TV set and conditions the signal to the plasma panel.

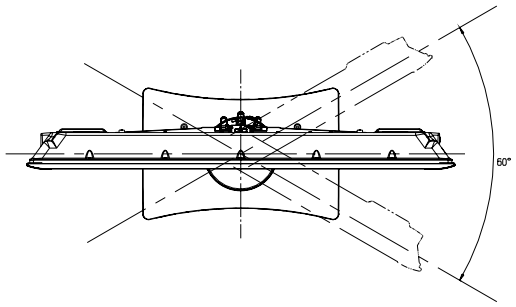
The 42” and 55” monitors contain the displaying device, which is the plasma display panel module, and the driving circuitry, which receives the signal from the Digital AV Block and after processing, delivers the image to the display module.

This HITACHI Service Manual is intended for the qualified service personnel and it contains the necessary information for troubleshooting the Plasma television set in case of malfunction.

DIMENSIONS:

42HDS52/HDT52/HDX62





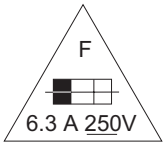
POWER RATINGS:

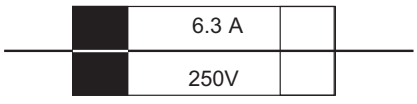
No.	Model Name	Indicated Value			PST(W)		Chassis
		Max Rating		Average Rating (W)	Without POD. less than 1W	With POD. less than 14W	
		(W)	(A)				
1	42HDS52/HDT52 42HDX62	370W	3.3A	236W	0.5W	15W	DW-1U

CIRCUIT PROTECTION

CAUTION: Below is an EXAMPLE only. See Replacement Parts List for details. The following symbol near the fuse indicates fast operation fuse (to be replaced). Fuse ratings appear within the symbol.

Example:





“RISK OF FIRE - REPLACE FUSE AS MARKED”

The rating of fuse F902 is 6.3 A - 250V.
Replace with the same type fuse for continued protection against fire.

SPECIFICATIONS

FEATURES

A-Plasma

Model			42HDS52/42HDT52/42HDX62	
Dimension	Size	1	1134mm x 728mm x 360mm	
	Weight	2	44k g	
A/C Input Voltage	Input AC Voltage	3	AC108V~132V (with 3 Plug AC Power Cord inlet type ,1.8m length)	
	Input AC Frequency	4	60Hz	
	Power Consumption	5	370W, SBY/POD -SBY less than 1W/15W	
Front End	Front End(Sub/ATSC)	6	ENGE6401DF/ENV56N01D5F NTSC/NTSC/ATSC(8VSB).64QAM.256QAM)	
	Available Channel	7	2~13	VHP
		8	14 ~ 69	UHF
		9	A-5~A-1,A~W,W+1~W+94	CATV
Input Signal	Video Signal	10	N T S C	
	Component Signal	11	480 i /p. 1080 i , 720p	
	PC Signal	12	V G A - U X G A fH:24KHz-1 09KHz,fV:50Hz-85Hz)	
	HDMI Signal	13	480i,480p,720p,1080i(EIA-861B)	
Picture	Y/C Separation	14	3D Y/C (ON fix)	
	Line Correction	15	No	
	I-P Conversion	16	Motion Adaptive & Multi Angle Interpolation	FC6
	Picture Mode	17	Day.Night	
	Display Mode	18	42:1024i,55:768p	Video Signal
		19	42:1024i,55:768p	ComponentSignal
		20	42:1024i,55:768p	PinP Mode
		21		-
Sound Enhancement		22	TruBass or Dynamic Bass (High, Low, Off) BBE(Off,Soft,Hard) SRS (Off,Normal,Wide)	
Adjustment	Settings for Video Signal	23	Picture,Contrast,Brightness,Color,Tint , Sharpness, W/B Temp.Black Enhancement .Contrast Mode.Color Management/Decoding ,Auto Color.Noise Reductfon.Auto Movie Mode, .Black Side Panel	
	Settings for Sound	24	Vol, Balance, Bass.Treble, Source, Internal Speakers ,Auto Noise Cancel.Perfect Volume.Mute.Soft Mute	
		25		
		26		
General Function	PinP Mode — Split	27	With(All video signal combinations, except PC signal)	Except Photo Input
	Strobe	28	With(4Pix:only ANT A/B,Video,480i)	Except Photo Input
	Surf	29	With(SURF12:only AMT A/B)	Except Photo Input
	POP	30	WithfMain: ANT A/B,Video.480i Sub: ANT A/B,Video.480i,1080i)	Except Photo Input
	PIP	31	With(Main:1080i Sub: ANT A/B,Video,480i.10aoi)	Except Photo Input
	Freeze	32	With(4Pix:only ANT A/B,Video,480i)	Except Photo Input
	Wide Mode	33	6Mode	
	Aspect Video Selection	34	4:3 Standard/1 6:9 Standard/ 4:3 Expanded/Zoom 1/Zoom 2/16:9 Zoom	
	PC	35	Full/Normal/Real (Real 42:VGA,55:VGA/SVGA/XGA/WXGA)	
	Film Theater	36	With(Auto Movie Mode:On/Off)	
	Color Temperature	37	4Mode (High/Medium/Standard/Black & White)	
	Input Signal Selection	38	VIDEO1/2/3/4/5, Cable/ Air,IEEE1394,Photo Input	

TABLE OF CONTENTS

SPECIFICATIONS

FEATURES

Model			42HDS52/42HDT52/42HDX62	
General Function	Gamma Correction	39	Only for Service Menu	
	Picture Enhancer	40	-	
	Input Signal Identification	41	yes	
	Audio Special Mode	42	No	
	Power Save Mode	43	With (On/Off) (Video In)	LED Normal: Green
		44		Power Save: Orange Stand by: Red
	Burning Protection	45	With (Raster Shift:3 option.All White Pattern)	
	OSD Language (VIDEO)	46	ENGLISH.FRANCAIS.ESPANOL	
	Power Swivel	47	With	
R/C Handset		48	CLU-3841WL/CLU-122S	PANASONIC/UEI
In/Out Terminal		49		
	Composite Video Input (VIDEO1~5)	50	5 Input: RCA pin* 5 (1 Input Front Panel)	
	S-In(S2 Terminal) (Video/S are common selector, priority is S-In) .	51	3 InputMini Din-4P x 3 (1 S-In on Front Panel)	
	Component Signal Input (VIDEO3.VIDEO4)	52	2 Input:RCA pin x 6(Y of VIDEO1/2 is common input for Composite-In)	
	Digital Input(HDMH-HDCP)	53	2 Input:HDMI(18P)X1 (Selected by component Video1/2.Digital input priority)	
	Audio In (L/R) (Lch:mono)	54	6 Input;RCApinxi2 (RGB:1 Input,Video:5 Input)	
	CATV In	55	1 Input (VIDEO2 LINK)	Auto Link Function
	Video Control Terminal (BS)	56	No	
	U/V Ant Input	57	CABLE IN / AIR-B IN	
	BS-I/F Input	58	No	
	Video Monitor Out Terminal	59	1 Output: RCA pin x 1	
	Audio Output Terminal	60	1 Output UR:RCA pin x 2(Common input for No.59)	
	Audio Monitor Out Terminal	61	1 Output L/R:RCA pin x 2	
	IR-OUTPUT	62	2 Terminal	
	Headphone Terminal	63	1 Terminal (only for AVC)	
		64		
	IEEE 1394 Input	65	2 (4pin connector)	42HDT52/42HDX62 Only
	RS-232C Terminal	66	1 (Female type)	
	Photo Input	67	1 (On Side panel)	
	Audio Optical Output	68	1 (Square type)	
Front Key	Main Power Switch	69	Yes , below panel	
	Power On/off Switch	70	Yes, on side panel	
	IR Receiving Unit	71	Yes, on front panel	
	Power Indicator LED	72	Yes, on front panel	
	Menu Control Key	73	Yes, on side panel (Channel U/D, Vol U/D, A/V Input Select , Menu Select)	
Option	POP TV Stand	74	With	
	Wall Mount Unit	75	With	
		76	-	

Environment Specifications

NO	Item	Specification
1	Operating Temp.	+5°C~+35°C
2	Stock Temp.	-15°C~+60°C
3	Operating Humidity	20%~80%RH
4	Stock Humidity	20%~90%RH
5	Operating Atmosphere Pressure	800~1114h Pa (1888m~-757m)
6	Stock Atmosphere Pressure	300~1114h P a (4727m~-757m)
7	Warranty Gravity Vertical	0.85 G
8	Warranty Drop High	30cm
9	Tilt Angle	12° Over

Basic Differences and Specifications

NO	Model Name	Chassis	Class	Basic. Digital Cable	POD	EPG Gemstar	MEDIA M/C	FC	3/2 Pull Dwn	Memory by Inputs	Shiled	Resolution	OSD	Color Temperature	PIP	AV NET	Remote	Simple (UEI)
1	42HDX62	DW1-U	Director's	X	X	X	USB	FC6	Auto/Off	X	Dark filter	1024*1024	05 Director OSD	5400/6500/9300/12000	Digital/Analog SPLIT	IV	PANA Black	X
2	42HDT52	DW1-U	UltraVision	X	X	X	USB	FC6	Auto/Off	X		1024*1024	05 OSD A	5400/6500/9300/12000	Digital/Analog SPLIT	IV	PANA Black	-
3	42HDS52	DW1-U	UltraVision	X	X	-	USB	FC6	Auto/Off	X		1024*1024	05 OSD B	5400/6500/9300/12000	Digital/Analog SPLIT	IV	PANA Black	-

NO	Model Name	Descrete Code	Rear Jacks																Front Jacks			Auto Link	Power LED	Remote Swivel
			Surround sound		Output (Watt)	Speaker	Digital I/F		IR-Out	RS232C	YPbPr	S IN	AV IN	S OUT	AV Out	6CH Audio In/Out	Variable Audio out	2 RF	S IN	AV IN	DV			
			Dolby	SRS/BBE			IEEE1394,5C	HDMI																
1	42HDX62	X	Dby AC3 Dwnmix	WOW,BBE	40	2FR,2W	1	2	2	X	2(1H,2H,2.14H)	2	4	1	1	Opt-Out(opt)	X	X	1	1	1	X(G)	RED	X
2	42HDT52	X	Dby AC3 Dwnmix	WOW,BBE	40	2FR,2W	1	2	2	X	2(1H,2H,2.14H)	2	4	1	1	Opt-Out(opt)	X	X	1	1	1	X(G)	RED	X
3	42HDS52	X	Dby AC3 Dwnmix	WOW,BBE	40	2FR,2W	—	2	2	X	2(1H,2H,2.14H)	2	4	1	1	Opt-Out(opt)	X	X	1	1	—	X(G)	RED	X

NO	Model Name	Color Decording	Color Management	Auto Color	ISF MODE
1	42HDX62	×	×(Gain/Phase)	×	×
2	42HDT52	-	-	-	-
3	42HDS52	-	-	-	-

3. General Specification

3.1 Model Spec

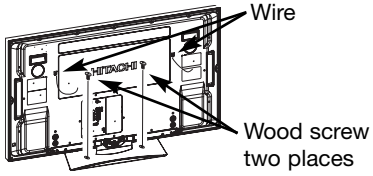
Model Name Item		42HDS52/42HDT52/42HDX62
Destination		U.S.A. / CANADA
Exterior	Cabinet Dimensions (Main Body) (Speaker & stand inclusive)	1188X666X98.7 mm 1188x746.5x323 mm
	Frame Color Screen	Dark Charcoal Metallic
	Stand	Inclusive (With Power Swivel)
	Weight (Main Body) (Speaker & stand inclusive) (Main Body: Packed)	44.0 kg typ. 46.0 kg
	Screen Size	922x522mm(42Inch 16:9)
Display Panel	Resolution	1024x1024 pixels
	Dot Pitch (H)	0.90mm
	Dot Pitch (V)	0.51mm
	Viewing Angle (H)	±85°
	Viewing Angle (V)	±85°
Front Filter	Surface Finishing	AR Coating, Mesh
Brightness	Peak Brightness (1% window)	280 cd/m^2 or more (When VIDEO, Sports, Color temperature 'HIGH' Input Signal Amplitude 100 % is set) 280 cd/m^2 or more (When RGB is set)
	All White Pattern	5Ocd/m^2 or more
Contrast	Contrast ratio	1000 : 1 (typ)
Color Reproduction	Color Reproduction	16.7 million colors or more
Audio Output	Audio Output	12W+ 12W(6ohm>,10%Distortion)
Panel Operation	Main Power Switch	PUSH (LOCK) 1 switch
	Power Switch	PUSH (NON-LOCK) 1 switch
Input Terminal	Video/Audio Input	RCA , HDMI DV connector
Output Terminal	Audio Line Output	Sub Woofer Output 1 system
	Speaker Output	-
Power Supply Source	Connector	3 Polarity Receptacle
	Input Voltage	Single Phase AC108-132V, 6OHz
Guaranteed Environment Condition	Temp. (Operating)	5~35°C (41F~95F)
	Temperature (Stored)	-15~60°C (5F~140F)
	Humidity (Operating)	20~80%RH (Non-condensing)
	Humidity (Stored)	20~90%RH (Non-condensing)
	Atmospheric Pressure (Operating)	800 to 1114hPa (altitude: 1888m to -757m, 6194feet to -2483feet)
	Atmospheric Pressure (Storage)	300 to 1114hPa (Altitude: 9727m to -757m, 31912feet to -2483feet)

How To Set Up Your New Hitachi Plasma Television

To take measures to prevent the Plasma Display from tipping over and prevent possible injury it is important to mount the unit in a stable and flat surface.

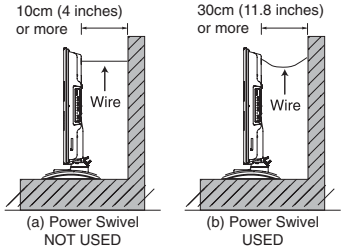
Securing to a table-top

1. Using wood screws (two) fasten the set to the clamping screw holes on the rear of the Plasma Display stand as shown below.
2. Using commercially available wood screws, secure the set firmly in position.



Securing to a Wall

1. Keep the Plasma television 4 inches away from the wall except when mounted using the wall mount bracket.
2. Secure the television to the wall as shown in fig. (a) or (b).

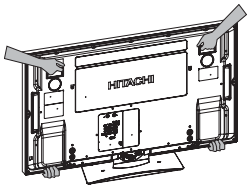


NOTES:

1. *Do not block the ventilation holes of the Plasma Display monitor. Blocking the ventilation holes might cause fire or defect.*
2. *In case of an abnormal symptom, unplug the AC cord.*
3. *If you purchased the wall mount bracket option, please ask for professional installer. Do not install by yourself.*
4. *If the Power Swivel feature will not be used, the Plasma television should be secured to the wall as shown in fig. (a).*
5. *If the Power Swivel feature will be used, the Plasma television should be secured to the wall as shown in fig. (b). The wires need to be long enough to allow the television to turn 30˚ to the left and right.*

Caution when moving the main unit

As this product is heavy, whenever it is moved, two people are required to transport it safely. Whenever the unit is moved it should be lifted forward using the top and base on both sides of the Display Monitor for stability. When moving the Display Monitor, lift the handles and the bottom frame as shown below. Do not grab the speakers or the back cover when lifting.

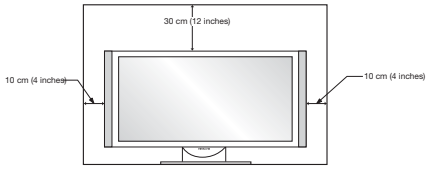


ANTENNA

Unless your Plasma Television is connected to a cable TV system or to a centralized antenna system, a good outdoor color TV antenna is recommended for best performance. However, if you are located in an exceptionally good signal area that is free from interference and multiple image ghosts, an indoor antenna may be sufficient.

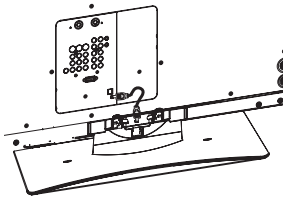
LOCATION

Select an area where sunlight or bright indoor illumination will not fall directly on the picture screen. Also, be sure that the location selected allows a free flow of air to and from the perforated back cover of the set. In order to prevent an internal temperature increase, maintain a space of 10 cm (4 inches) from the sides/back of the monitor, and 30 cm (12 inches) from the top of the television to the wall. To avoid cabinet warping, cabinet color changes, and increased chance of set failure, do not place the TV where temperatures can become excessively hot, for example, in direct sunlight or near a heating appliance, etc.



CONNECT POWER SWIVEL CABLE

Connect one end of cable (Arrow mark facing left) to the swivel slot of the Plasma Rear Panel. Connect the other end (Arrow mark facing front)to the swivel slot of the Table Top Stand.



TURNING RADIUS

The maximum turning radius is 30˚ (left and right). Do not place any objects on the path of the monitor when using the power swivel feature.

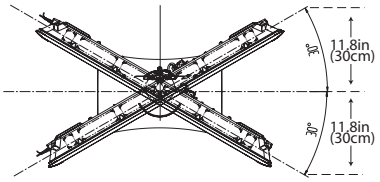


TABLE OF CONTENTS

HOW TO SET UP YOUR NEW HITACHI PLASMA TELEVISION

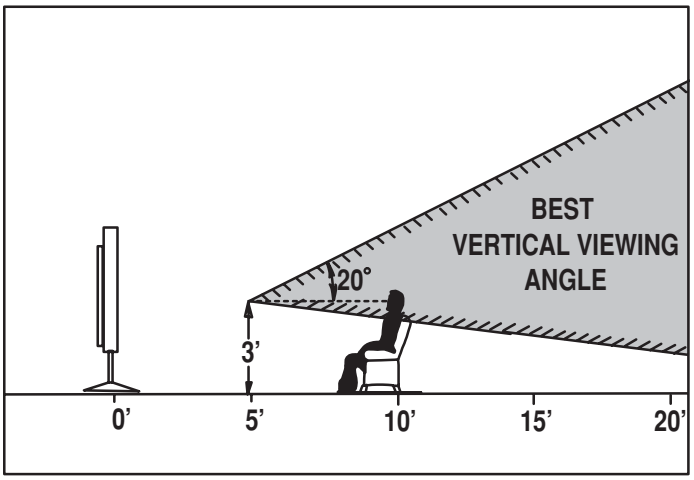
VIEWING

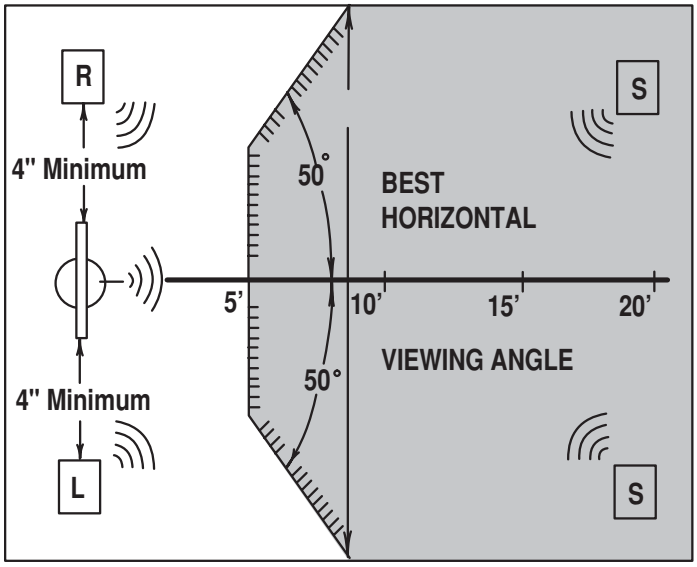
The major benefit of the HITACHI Plasma Television is its large viewing screen. To see this large screen at its best, test various locations in the room to find the optimum spot for viewing.

The best picture is seen by sitting directly in front of the TV and about 8 to 18 feet from the screen.

During daylight hours, reflections from outside light may appear on the screen. If so, drapes or screens can be used to reduce the reflection or the TV can be located in a different section of the room.

If the TV's audio output will be connected to a Hi-Fi system's external speakers, the best audio performance will be obtained by placing the speakers equidistant from each side of the receiver cabinet and as close as possible to the height of the picture screen center. For best stereo separation, place the external speakers at least four feet from the side of the TV, place the surround speakers to the side or behind the viewing area. Differences in room sizes and acoustical environments will require some experimentation with speaker placement for best performance.

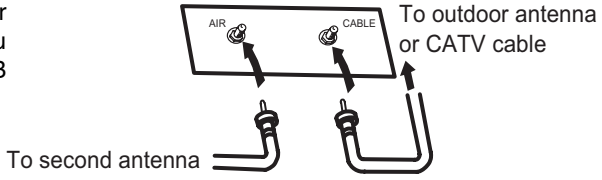




ANTENNA CONNECTIONS TO REAR PANEL JACKS

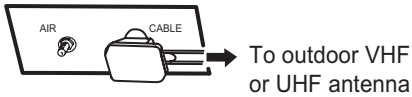
VHF (75-Ohm) antenna/CATV (Cable TV)

When using a 75-Ohm coaxial cable system, connect the outdoor antenna or CATV coaxial cable to the ANT A (75-Ohm) terminal. If you have a second antenna, connect the coaxial cable to the ANT B terminal.



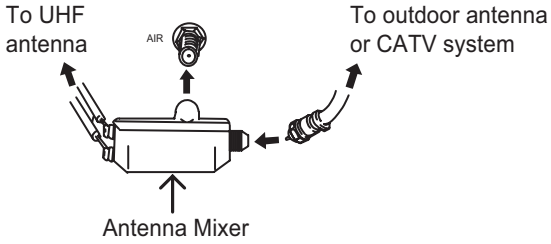
VHF (300-Ohm) antenna/UHF antenna

When using a 300-Ohm twin lead from an outdoor antenna, connect the VHF or UHF antenna leads to screws of the VHF or UHF adapter. Plug the adapter into the antenna terminal on the TV.



When both VHF and UHF antennas are connected

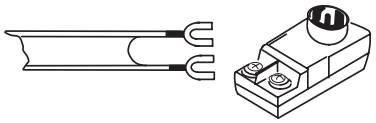
Attach an optional antenna cable mixer to the TV antenna terminal, and connect the cables to the antenna mixer. Consult your dealer or service store for the antenna mixer.



Hook-up Cables and Connectors

Most video/audio connections between components can be made with shielded video and audio cables that have phono connectors. For best performance, video cables should use 75-Ohm coaxial shielded wire. Cables can be purchased from most stores that sell audio/video products. Below are illustrations and names of common connectors. Before purchasing any cables, be sure of the output and input connector types required by the various components and the length of each cable.

300-Ohm Twin Lead Connector
This outdoor antenna cable must be connected to an antenna adapter (300-Ohm to 75-Ohm).

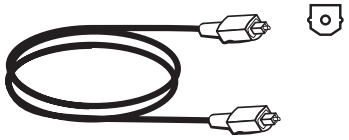


Phono Connector
Used on all standard video and audio cables which connect to inputs and outputs located on the television's rear jack panel and front control panel.

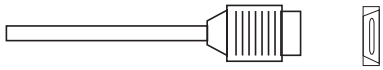
"F" Type 75-Ohm Coaxial Antenna Connector
For connecting RF signals (antenna or cable TV) to the antenna jack on the television.

S-Video (Super Video) Connector
This connector is used on camcorders, VCRs and laser-disc players with an S-Video feature in place of the standard video cable to produce a high quality picture.

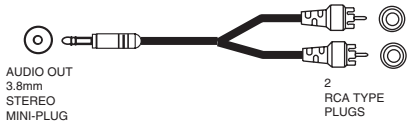
Optical Cable
This cable is used to connect to an audio amplifier with an Optical Audio In jack. Use this cable for the best sound quality.



HDMI Cable
This cable is used to connect your external devices such as Set-Top-Boxes or DVD players equipped with an **HDMI** output connection to the TV's **HDMI** input.

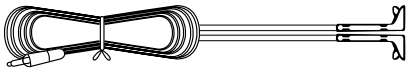


Stereo Cable (3.8mm plug to 3.5mm plug)
Used on all standard video and audio cable which connect to inputs and outputs located on the rear jack panel and front control panel.



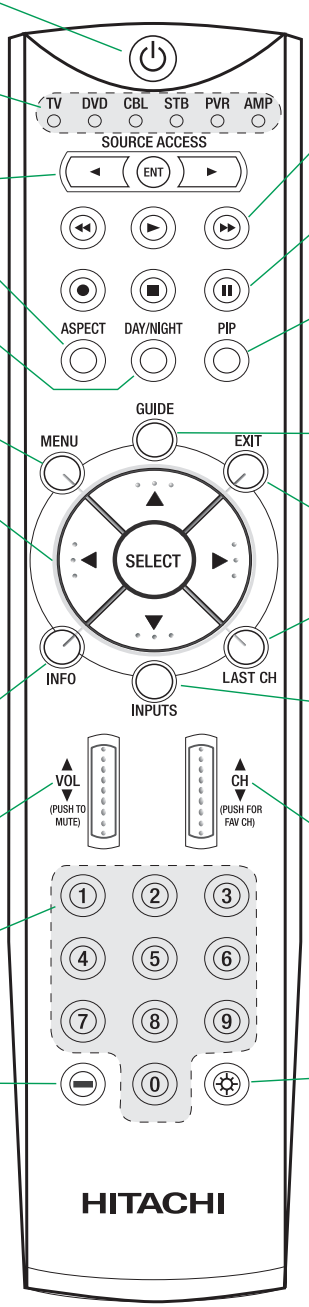
USB Cable
This cable is used to connect your digital camera to the Photo Input in the side of the Plasma television.

IR Mouse Cable (Provided)
Connect the IR Mouse to the IR output of your Plasma Television when A/V Network is used. You must place the IR mouse in front of the corresponding IR window of your cable box and VCR. This connection allows your TV to control your cable box and VCR.



Power Swivel Cable (Provided)
This cable is used to connect the swivel stand to the rear panel of the Plasma Television.

QUICK REFERENCE REMOTE CONTROL



POWER BUTTON
(TV, DVD, CBL, STB, PVR/VCR, AMP/CD)
Turns the selected device on and off.

MODE INDICATOR
Turns on or blinks to show remote control mode when the SOURCE ACCESS buttons are pressed.

SOURCE ACCESS BUTTONS
(TV, DVD, CBL, STB, PVR/VCR, AMP/CD)
Changes the mode of the Universal Remote Control to control the device selected.

ASPECT BUTTON
(TV)
Changes the aspect ratio of the TV.

DAY/NIGHT
(TV)
Toggles picture mode settings between DAY and NIGHT mode.

MENU BUTTON
(TV, DVD, CBL, STB, PVR/VCR)
Accesses the OSD menu system.

CURSOR PAD/SELECT BUTTON
(TV, DVD, CBL, STB, PVR/VCR)
The Cursor Pad is used as a cursor to navigate through the OSD and INPUT menu systems. The Select button is used to Select/Activate highlighted menu items.

INFO BUTTON
(TV, STB, CBL, PVR)
Displays various information on the screen, such as channel information.

VOLUME WHEEL
(TV, AMP/CD)
Scroll up and down to adjust the audio level of your TV. Push down on the wheel to mute.

NUMERIC BUTTONS
(TV, DVD, CBL, STB, PVR/VCR, AMP/CD)
Used to manually enter the TV channel, and used for numeric entry when navigating through the OSD, INPUTS, and AV NET menu systems.

(-) BUTTON
(TV,STB)
The (-) button is used when the remote is in Set-Top-Box (STB) mode or when the TV uses a digital input.

DVD/VCR CONTROL BUTTONS
(DVD, PVR/VCR, AMP/CD)
Controls the functions of your VCR, DVD and audio devices.

PAUSE BUTTON
(TV,PVR/VCR, DVD, AMP/CD)
Press to show and change the Freeze mode of the TV. Also used to pause other devices when the remote is in DVD, PVR/VCR, or AMP/CD mode.

PIP CONTROL BUTTONS
(TV)
Press to show and change the Picture-in-Picture mode.

GUIDE BUTTON
(TV, STB, CBL, PVR)
Accesses the Channel Guide of the TV or the program guide of other devices.

EXIT BUTTON
(TV, CBL, STB, PVR/VCR)
Exits out of the OSD, INPUTS or AV NET menu systems if their menu is displayed.

LAST CHANNEL BUTTON

INPUTS BUTTON
(TV, AMP)
Accesses the INPUTS menu system.

CHANNEL WHEEL
(TV, CBL, STB, PVR/VCR, AMP/CD)
Scroll up or down to change channel. Push down on the wheel to access (FAV) Favorite Channel mode. (Favorite channel is only available for TV mode.)

LIGHT BUTTON
(TV, CBL, STB, PVR)
Press to use the back light feature. Can also be used to change backlight mode.

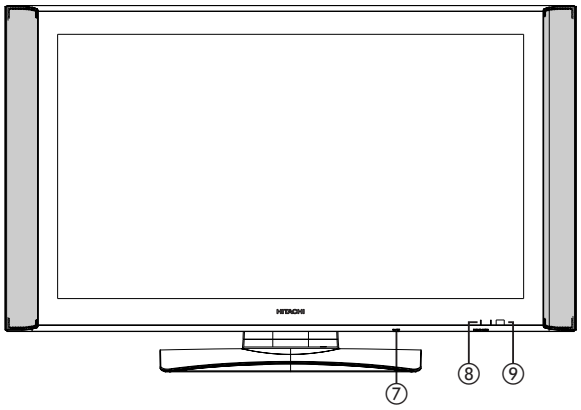
In addition to controlling all of the functions on your HITACHI Plasma TV, the remote control is designed to operate different types of devices, such as, DVD Players, Cable Boxes (CBL), set-top-boxes, satellite receivers, PVRs/VCRs and audio devices. The remote control must be programmed to control the chosen device. Refer to Instruction Book for detailed programming instructions.

LEGEND
TV - Television
DVD - Digital Video Disc Player
CBL - Cable Box
STB - Set-Top-Box/Satellite Receiver
PVR - Personal Video Recorder
VCR - Video Cassette Recorder/Player
AMP/CD - Amplifier/Compact Disc Player, Audio Devices

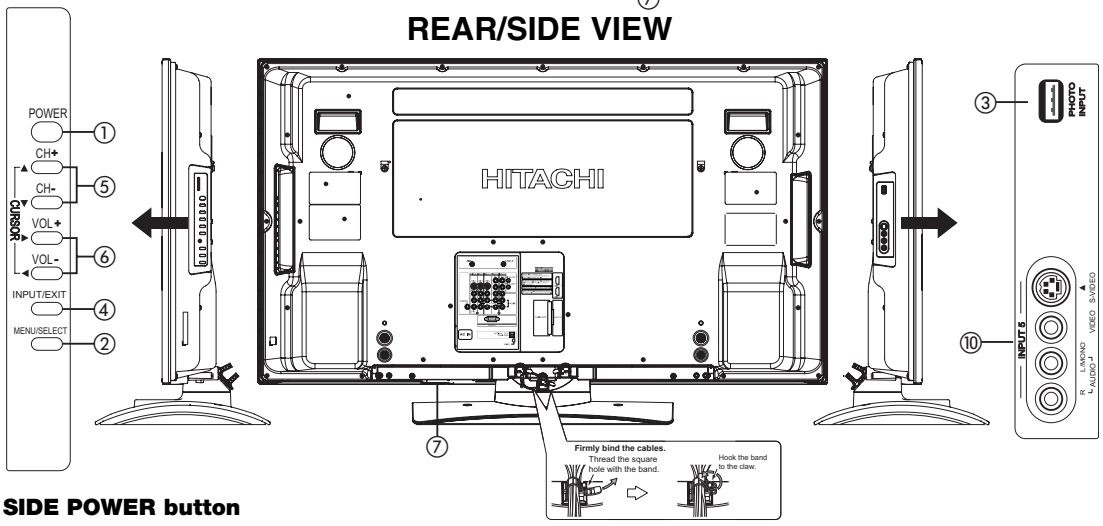
NOTES:
1. VCR precode is included in the PVR mode.
2. CD precode is included in the AMP mode.
3. Pressing any buttons will illuminate the backlight for 4 seconds while in Automatic mode (Default).

Front/Rear/Side Panel Controls

FRONT VIEW



REAR/SIDE VIEW



① **SIDE POWER button**
Press this button to turn the Plasma Television ON/OFF. It can also be turned ON/OFF by remote control. The "MAIN POWER" button must be at stand-by mode.

② **MENU/SELECT button**
This button allows you to enter the MENU, making it possible to set TV features to your preference without using the remote. This button also serves as the SELECT button when in MENU mode.

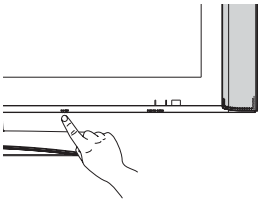
③ **PHOTO INPUT**
Insert USB cable from your Digital Camera, USB memory or memory card USB drive to view your digital still pictures .

④ **INPUT/EXIT button**
Press this button to access the INPUT menu. Press again to exit the MENU mode.

⑤ **CHANNEL selector**
Press these buttons until the desired channel appears in the top right corner of the TV screen. These buttons also serve as the cursor down (▼) and up (▲) buttons when in MENU mode.

⑥ **VOLUME level**
Press these buttons to adjust the sound level. The volume level will be displayed on the TV screen. These buttons also serve as the cursor left (◀) and right (▶) buttons when in MENU mode.

⑦ **POWER button**
Display Monitor "MAIN POWER" button
This power button is for the complete system, and must be turned ON/OFF manually. It is recommended to leave the "MAIN POWER" to ON condition (lights red) for stand-by mode.



The Main Power button is located on the broadside bottom, under the label "MAIN POWER".

NOTE: *When the "MAIN POWER" button is set to OFF or the TV is unplugged, the clock will stop and may eventually reset itself.*

⑧ **POWER light indicator**
To turn the monitor ON, press the main power switch located on the lower right side of the monitor. A red stand-by indicator lamp located on the lower right corner of the front bezel will illuminate. The Plasma TV is now ready for remote ON/OFF operation.

Indicating Lamp	Power Status	Operating
Off	Off	When the main power switch is set to OFF.
Lights Red	Off (Stand-by)	When the main power switch on the display monitor is ON.
Lights Green	On	Display monitor MAIN POWER is ON.
Lights Orange	Off (Power Saving)	Display monitor MAIN POWER is ON with no signal input except antenna (no sync. signal).

⑨ **REMOTE CONTROL sensor**
Point your remote at this area when selecting channels, adjusting volume, etc.

⑨ **LEARNING AV NET sensor**
Point your equipment's remote control at this area while using the AV NET Learning Wizard.

⑩ **SIDE INPUT JACKS (for VIDEO: 5)**
Use these audio/video jacks for a quick hook-up from a camcorder or VCR to instantly view your favorite show or new recording. Press the INPUTS button then use the CURSOR PAD and the SELECT button on the remote control to select INPUT 5. If you have mono sound, insert the audio cable into the left audio jack.

NOTES:
1. *Your HITACHI Plasma TV will appear to be turned OFF (lights orange) if there is no video input when VIDEO: 1, 2, 3, 4 and 5. Check the Power Light to make sure the Display Monitor is turned off or in Stand-by mode (lights red) when not in use.*
2. *Remote Control can not turn ON/OFF the "MAIN POWER" of the display monitor.*

REAR PANEL CONNECTIONS

① **Antenna Input**
The remote control allows you to switch between two separate 75-Ohm RF antenna inputs, CABLE and AIR. CABLE input can be displayed as a main picture or sub-picture. AIR can only be displayed as a main picture (AIR cannot be displayed as a sub-picture).

② **Audio/Video Inputs 1, 2, 3 and 4**
By using the INPUTS button, the CURSOR PAD (▲ and ▼), and the SELECT button or CURSOR PAD ▶ of the remote control, you can select each video source. Use the audio and video inputs to connect external devices, such as VCRs, camcorders, laserdisc players, DVD players etc. (if you have mono sound, insert the audio cable into the left audio jack).

③ **MONITOR OUT & HI-FI AUDIO OUT**
These jacks provide fixed and variable audio and video signals (CABLE/AIR, INPUT 1, 2 and 5) which are used for recording. Use the S-VIDEO Output for high quality video output. Component signal to Input 1 and 2, and HDMI inputs will not have monitor output.

④ **Optical Out (Digital Audio)**
This jack provides Digital Audio Output for your audio device that is Dolby® Digital and PCM compatible, such as an audio amplifier.

NOTE: **Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.*

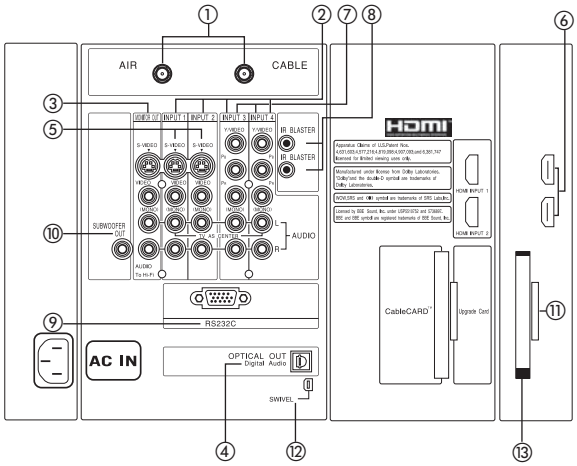
⑤ **S-VIDEO Inputs 1 and 2**
Inputs 1 and 2 provide S-VIDEO (Super Video) jacks for connecting equipment with S-VIDEO output capability.

NOTE:
1. *You may use VIDEO or S-VIDEO inputs to connect to INPUT 1 and 2, but only one of these inputs may be used at a time.*
2. *S-VIDEO output may be used for recording, only when the input is of S-VIDEO type.*

⑥ **HDMI1 (High Definition Multimedia Interface) (INPUT 1)**
ABOUT HDMI – **HDMI** is the next-generation all digital interface for consumer electronics. **HDMI** enables the secure distribution of uncompressed high-definition video and multi-channel audio in a single cable. Because digital television (DTV) signals remain in digital format, **HDMI** assures that pristine high-definition images retain the highest video quality from the source all the way to your television screen.

Use the **HDMI** input for your external devices such as Set-Top-Boxes or DVD players equipped with an **HDMI** output connection.

***HDMI**, the **HDMI** logo and High-Definition Multimedia Interface are trademarks or registered*



*trademarks of **HDMI** Licensing LLC.*

NOTE:
1. *The **HDMI** input is not intended for use with personal computers.*
2. *Only DTV formats such as **1080I, 720P, 480I** and **480P** are available for **HDMI** input.*

⑦ **Component: Y-PBPR Inputs**
INPUTS 3 and **4** provide Y-PBPR jacks for connecting equipment with this capability, such as a DVD player or Set Top Box. You may use composite video signal for both inputs.

NOTE:
1. *Do not connect composite **VIDEO** and **S-VIDEO** to **INPUT 1, 2** or **5** at the same time. **S-VIDEO** has priority over **VIDEO** input.*
2. *Your component outputs may be labeled Y, B-Y, and R-Y. In this case, connect the components B-Y output to the TV's PB input and the components R-Y output to the TV's PR input.*
3. *Your component outputs may be labeled Y-CBCR. In this case, connect the component CB output to the TV's PB input and the component CR output to the TV's PR input.*
4. *It may be necessary to adjust **TINT** to obtain optimum picture quality when using the Y-PBPR inputs (see page 41).*
5. *To ensure no copyright infringement, the **MONITOR OUT** output will be abnormal, when using the Y-PBPR jacks and HDMI Input.*
6. ***INPUT 3** and **INPUT 4** (Y/VIDEO) can be used for composite video and component video input.*

⑧ **IR Blaster**
This jack provides IR output to your external components (VCR, Cable box, DVD player, etc.). With this connection, your external components can automatically be controlled by the A/V network feature. This connection will allow you to control the external components with your Plasma Television's remote control in TV mode.

⑨ **For Service Use Only**
Do not connect anything to this terminal.
Contact 1-800-HITACHI for info regarding the RS-232 connection.

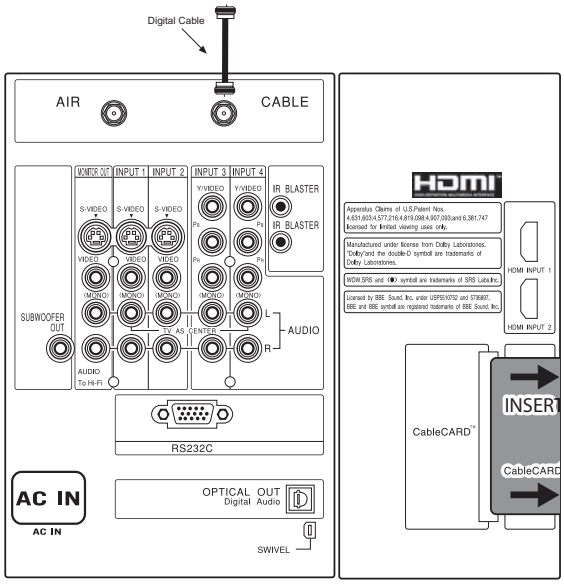
⑩ **Subwoofer Out**
Connect this SUB WOOFER OUT output to the external audio component input using the sub woofer cable provided.

⑪ **Upgrade Card**
This card slot is for future software upgrades. Hitachi will notify you if a software upgrade is required for your TV. In order to receive written notification, please complete and return your warranty card.

⑫ **To Power Swivel Connector**
Connects to the Power Swivel Table Top Stand.

⑬ **CableCARD Slot**
This slot is for the CableCARD that will be provided by your local cable operator to gain access to chosen cable channels. The CableCARD will allow you to tune digital and high definition cable channels. Please call your local cable operator if this service is available before requesting a CableCARD (also known as Point of Deployment (POD) module).

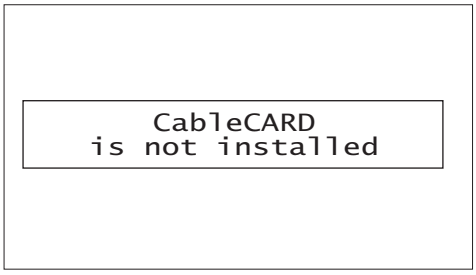
1. Connect a coaxial cable to cable terminal of the Rear Panel Jacks.
2. Insert the CableCARD into the slot (Top of card should be facing towards you as shown below).



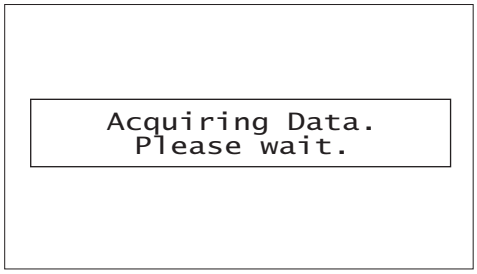
NOTE: *1. A digital cable subscription is required.*
2. AIR will not be available when CableCARD is inserted.
3. Do not insert a PCMCIA card into the CableCARD slot.

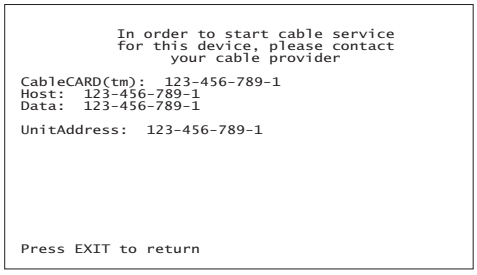
If the CableCARD is properly installed or not installed, the TV will display the following respective screens.

OR

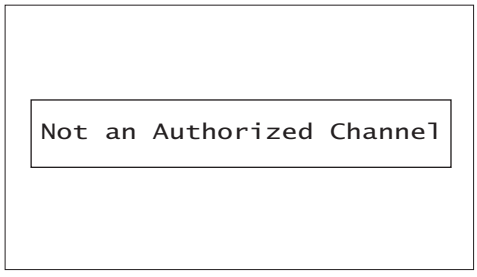


After the CableCARD is installed, wait until the second screen below appears. The third screen below will appear if a channel is not authorized for viewing. Press the **EXIT** button to exit the second screen.





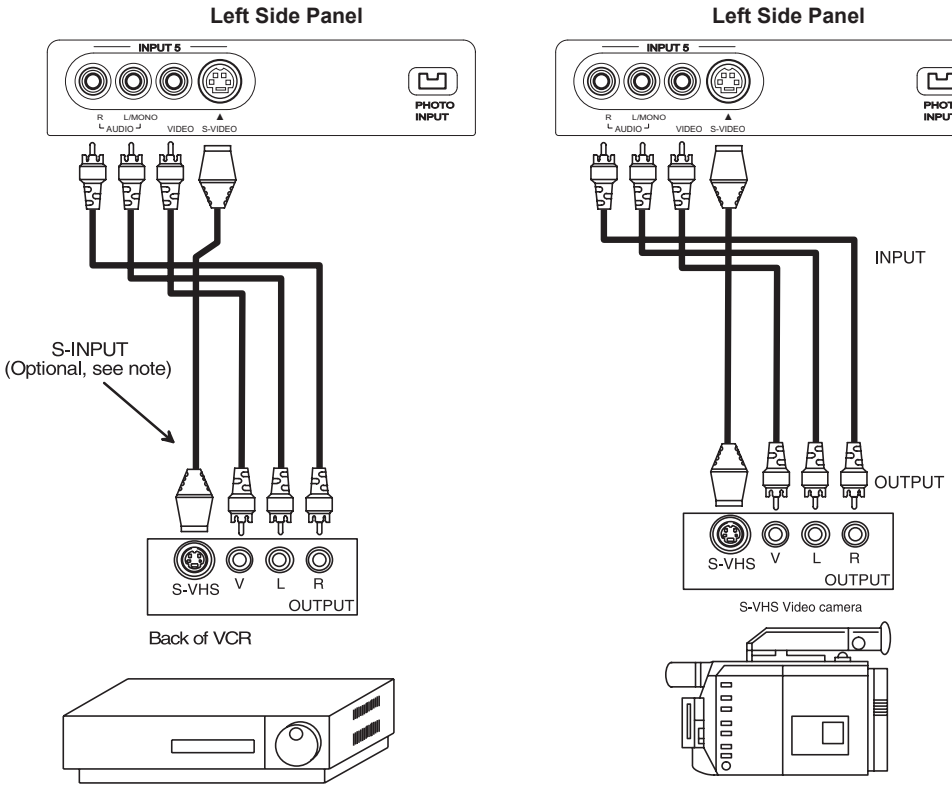
OR



Please take note of all information on the screen (you will provide this information to your cable operator). Call your cable operator and give them the information from the card to start your cable service.

Connecting External Video Sources

The front panel jacks are provided as a convenience to allow you to easily connect a camcorder or VCR as shown in the following examples:



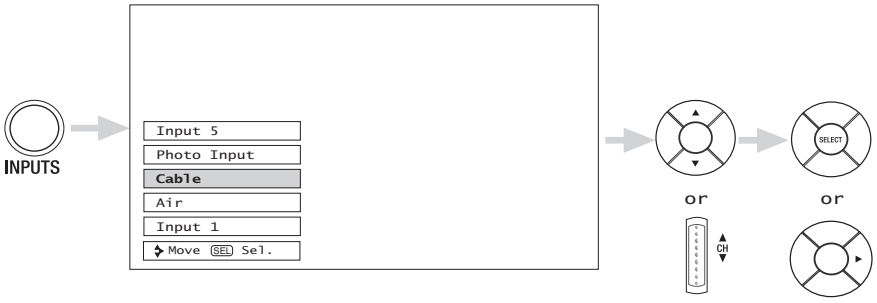
NOTE: *1. Completely insert connection cord plugs when connecting to left side panel jacks. If you do not, the played back picture may be abnormal.*
2. If you have a S-VHS VCR, use the S-INPUT cable in place of the standard video cable.
3. If you have a mono VCR, insert the audio cable into the left audio jack of your TV.
4. S-VIDEO input takes priority over VIDEO input.
5. If you have a VHS or 8mmcamcorder, use the S-VIDEO cable in place of the VIDEO cable.

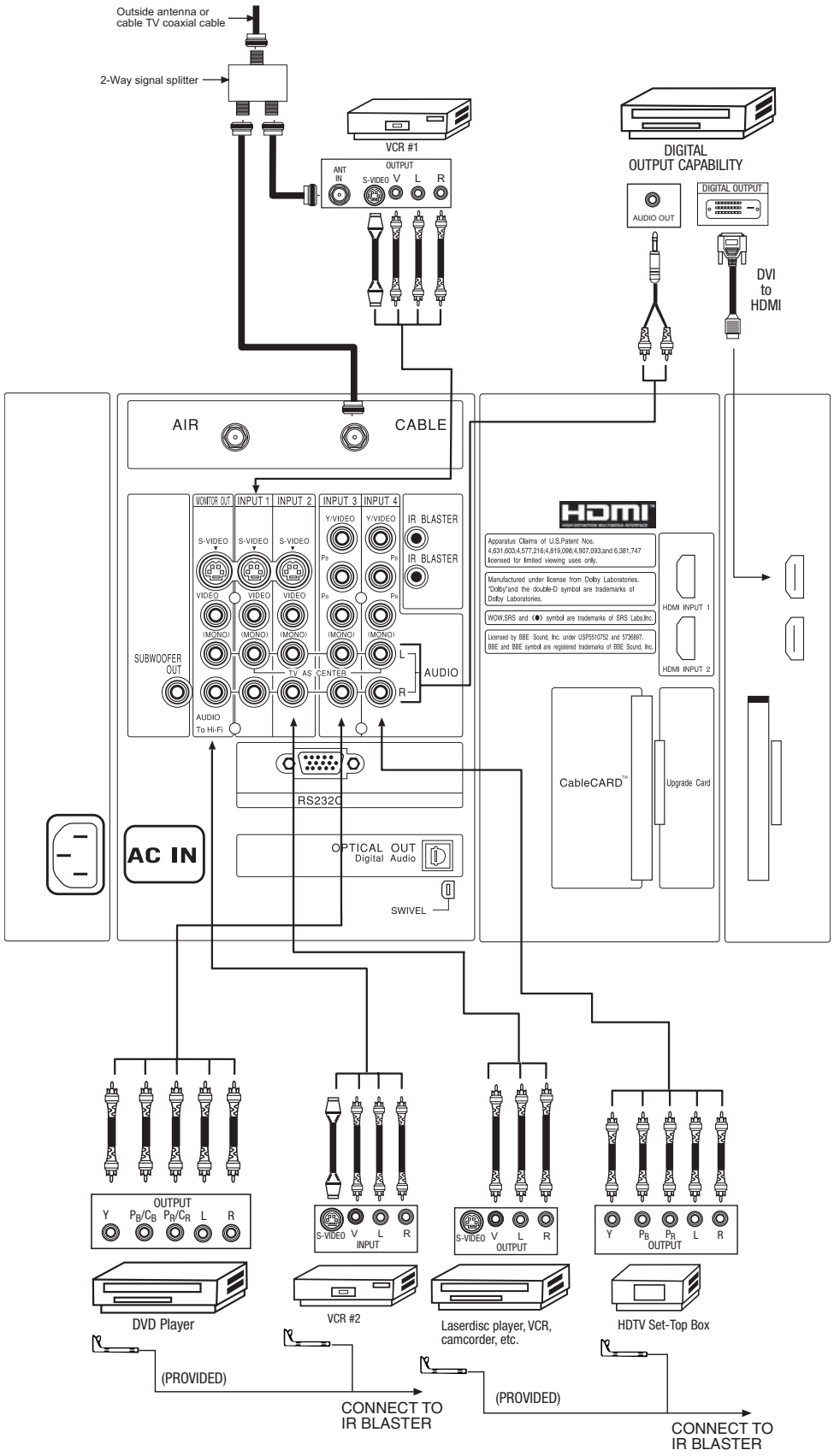
The exact arrangement you use to connect the VCR, camcorder, laserdisc player, DVD player, or HDTV Set Top Box to your Plasma TV is dependent on the model and features of each component. Check the owner's manual of each component for the location of video and audio inputs and outputs.

The following connection diagrams are offered as suggestions. However, you may need to modify them to accommodate your particular assortment of components and features. For best performance, video and audio cables should be made from coaxial shielded wire.

Before Operating External Video Source

Connect an external source to one of the INPUT terminals, then press the INPUTS button to show the INPUTS menu. Use the CURSOR PAD (▲ and ▼) to select the Antenna or Input of your choice. Then press the SELECT button or the CURSOR PAD ▶ to confirm your choice .





NOTE: *Cables are optional, except when specified.*

TIPS ON REAR PANEL CONNECTIONS

- S-VIDEO, YPbPR, or HDMI connections are provided for high performance laserdisc players, VCRs etc. that have this feature. Use these connections in place of the standard video connection if your device has this feature.
- If your device has only one audio output (mono sound), connect it to the left audio jack on (L/(MONO)) the Rear Panel.
- Refer to the operating guide of your other electronic equipment for additional information on connecting your hook-up cables.
- A single VCR can be used for VCR #1 and VCR #2, but note that a VCR cannot record its own video or line output (INPUT: 1 in the example on page 25). Refer to your VCR operating guide for more information on line input-output connections.
- Connect only 1 component (VCR, DVD player, camcorder, etc.) to each input jack.
- COMPONENT: Y-P_BP_R (Input 3 & 4) connections are provided for high performance components, such as DVD players and set-top-boxes. Use these connections in place of the standard video connection if your device has this feature.
- Your component outputs may be labeled Y, B-Y, and R-Y. In this case, connect the components B-Y output to the TV's P_B input and the components R-Y output to the TV's P_R input.
- Your component outputs may be labeled Y-C_BC_R. In this case, connect the components C_B output to the TV's P_B input and the components C_R output to the TV's P_R input.
- It may be necessary to adjust TINT to obtain optimum picture quality when using the Y-P_BP_R inputs.
- To ensure no copyright infringement, the MONITOR OUT output will be abnormal, when using the $^{Y\text{-}P_BP_R}$, and HDMI input jacks.
- Input 1 or 2 can accept HDMI signal.
- S-VIDEO monitor output may be used for recording only when the input is of S-VIDEO type.
- When using a DVI or HDMI input from a Set-Top-Box, it is recommended to use a 1080i or 720p input signal.

MACROVISION NOTES:

1. Video signals fed through a VCR may be affected by copyright protection systems and the picture will be distorted on the television.
2. Connecting the television directly to the Audio /Video output of a Set-Top-Box will assure a more normal picture.

BASIC OPERATION

IMPORTANT NOTES

No.	Items	Notes
1	Arching sound from plasma display monitor's panel.	A buzzing sound might be heard when the plasma display monitor is turned on in a very quiet room. This is due to the plasma panel drive circuit when it is functioning. This arching sound is normal and it is not a malfunction.
2	Interference for infrared equipment.	Some infrared rays are emitted from the plasma display monitor's panel that might affect other infrared controlling equipment.
3	Bright and dark spots	High-precision technology is used to manufacture the plasma display panel; But in some cases, there are minor defects in some parts of the screen. Points that do not light, points with brightness different from that of the periphery, points with color different from that of the periphery, etc. Some pixels will always be on or always off. Please note that this is not a malfunction.
4	Picture Image (Spectrum)	When receving still picture signals, (e.g. channel number indication or clock indication) for a while, you can see image-like when the picture varied. This is not a defect.
5	Display panel surface temperature is too high	The plasma display panel is lighting the phosphors by the discharge of internal radiation. In some cases, this may cause the temperature of the panel surface to increase. Please note that this is not a malfunction. The Plasma TV surface temperature is higher than a Cathode-ray-tube.
6	Plasma Surface	The plasma panel is made from glass. Heavy shock on the front panel might damage it.
7	Transportation	When the PDP monitor is transported horizontally, the glass panel has the possibility of being broken or increasing the picture defects. At the time of transportation, horizontal style is prohibited. More-over, please treat the plasma panel with great care because of a precision apparatus. Please instruct transporters so that it should be put into the packing box at the time of shipment.(There is a possibility that breakage of the panel or defects will increase.) Rough transportation might cause damage to the panel and pixel failure.
8	Image retention	The plasma monitor illuminates phosphor to display images. The phosphor has a finite illumination life. After extended periods of illumination, the brightness of the phosphor will be degraded to such extent that stationary images would burn-in that part of the screen as grayed-out images. Tips to prevent such image retention are: - Do not display images having sharp brightness differences or hi-contrast images, such as monochrome characters and graphic patterns, for long. - Do not leave stationary images appearing for long, but try to refresh them at appropriate intervals of time, or try to move them using screen saver function. - Turn down the contrast and brightness controls.
9	Luminosity and contrast	PDP television has luminosity and low contrast compared with CRT television.
10	Granular spots	When a screen is seen at point-blank range, a random fine grain may be visible to a dark part.
11	Disturbance to video apparatus	If an apparatus (VCR, etc.) antenna line is arranged near the monitor, the image may shake, or disturbance may be received.
12	Lip Sync	There is some time lag betweeen the picture and the sound. You can see lip motion that is delayed compared to the sound.
13	About the use environment of PDP television (temperature)	Electric discharge/luminescence characteristic of the PDP panel also changes with peripheral temperature. Moreover, since there is also high power consumption value, a specified temperature environment is required.
14	Caution on prolonged storage	Storing the plasma television for a period of more than 2 to 3 months without use might cause an unstable picture when the set is turned on.
15	Operating	Operating altitude: 800 to 1114hPa (6194ft to -2484ft). Operating temperature: 41˚F to 95˚F.
16	Storage	Storage Altitude: 300 to 1114hPa (31,912 to -2484ft). Storage temperature: 5˚F to 140˚F.
17	Power ON or OFF	Frequent use of the Power ON or OFF might trigger the power protection circuit. If the TV does not turn ON, please wait a little before turning ON again.

ADJUSTMENTS TABLE OF CONTENTS

TO GO TO A SECTION, CLICK ON ITS HEADING BELOW

1 Adjustment procedure start up....29

1.1 How to get into adjustment mode....29
1.2 Changing data and selecting adjustment code....29

2 Memory initialize....29
2.1 Memory initialize operation....29
2.2 Factory and service adjustments....30

3 Video Adjustment....30
3.1 Sub-Contrast Adjustment....30
3.2 Brightness Check....30

4 POWER SUPPLY Vs, Va Voltage Adjustment....31

5 White balance adjustment....32
5.1 Video Color Temperature Adjustment (High)....32
5.2 Video Color Temperature Adjustment (Medium)....32
5.3 Video Color Temperature Adjustment (Standard)....33
5.4 Video Color Temperature Adjustment (Black and White)....33
5.5 White Balance Adjustment OSD Flowchart Diagram....34

6 DIGITAL MAIN CHECK....33

7 Screen Check....36

8 HDMI Adjustment....36

9 Settings for Delivery....37

10 I^2C Adjustment Data....40

1 ADJUSTMENT PROCEDURE START-UP

The 42HDT52 42HDS52 and 42HDX62 PDP TV sets pass through adjustment procedures during the assembly process. These adjustments must be done to assure the best performance of the PDP set for the consumer.

Also, after servicing, these same adjustments must be done. The adjustments are all made through the I²C bus by changing data in the Adjustment mode menu.

Table 2 on pages 38-46 shows the complete parameter list with a brief description, signal format, the adjustment range and the initial data.

1.1 HOW TO GET TO ADJUSTMENT MODE

Chassis adjustment mode can be access by pressing the R/C keys MENU + MENU + 8 + SELECT to enter adjustment mode. For some parameters the only way to see them is by selecting the parameter number than pressed SELECT in order to see it; then DATA can be change if other parameter needs to change then press ▼ key then repeat the same procedure.

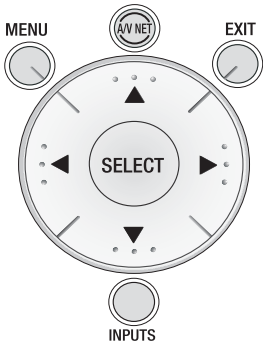
SUB BRIGHT	
WHITE BAL HIGH	□
WHITE BAL MED	□
WHITE BAL STD	□
WHITE BAL B/W	□
H POSITION	**
V POSITION	**
FACT RESET	

Other way to access this mode is by use JIG R/C code: (9C Hex). To escape from Adjustment Mode press “INPUT” key on Side panel or EXIT key of R/C to exit service adjustment mode.

1.2 CHANGING DATA AND SELECTING ADJUSTMENT CODE

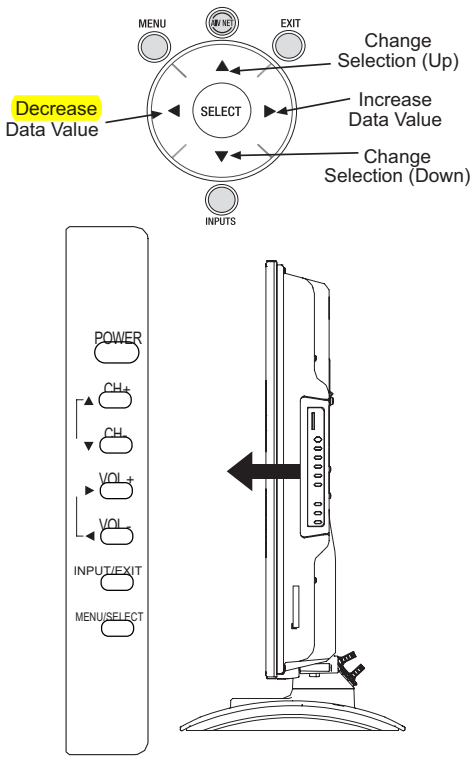
When the PDP set is in adjustment mode, the cursor ◀, ▶, ▲, ▼ and MENU keys of the remote control or front panel may be used as the adjustment keys.

A. Use any Hitachi remote control when making an adjustment.
▲, ▼ keys are used for selecting adjustment item.



◀, ▶ keys are used for changing data values.
MENU key is used to advance through the adjustment mode menus and pages.

Remote Control Buttons



B. To make a selection, use the NUMBER pad on the PDP R/C ; example : select SEINE press 69 then SELECT the DATA shown is "EB" ; if this DATA needs to be change press the ◀, ▶, keys to modify, when finish press SELECT key to store the new DATA value.
normal condition.

C. After finishing the necessary adjustment press the R/C EXIT key or EXIT key on the side panel.
Adjustment mode is released and PDP set returns to normal condition.

2 MEMORY INITIALIZE

2.1 MEMORY INITIALIZE OPERATION

NOTE: The execution of this function returns the adjustment codes to the preset values, therefore, **adjustment data will be lost**.

Procedure

(1) Enter Adjustment mode by the method described in sub-items 1.1 and 1.2 from item 1 (“Adjustment procedure start up”).
(2) Get to the second page of Adjust Mode by pressing remote control “Menu” key once, or with either the R/C or front panel ▲, ▼ cursor keys several times.
(3) Select MEMORY INIT adjust code.
(4) Activate MEMORY INIT by pressing ▶ cursor key for more than 3 seconds.
(5) Check the following process for initialization operation.

CH 7

BACK TO ADJUSTMENTS

·Process of Memory Initialize operation.

① A screen is be colored **blue** when MEMORY INIT start.

② A screen is be colored **green** when MEMORY INIT finish normally.

③ A screen is be colored **black** when MEMORY INIT finish abnormally.

(6) Do not unplug from AC outlet until this operation is complete and do not perform any key operation either, after this operation each factory setting and all adjust mode data should reset to delivery settings automatically.

(7) After Memory Initialize, it should be unplug AC cord. Unplug and plug AC cord and then all settings and data are updated.

(8) When PDP turns ON , it will tune CH03 this is the complete operation of Memory Initialize process.

2.2 FACTORY AND SERVICE ADJUSTMENTS

The adjustment item that is affected by the memory initialize operation is shown below:

*** JIG. R/C FACTORY PRESET CODE:92**

MEMORY INITIALIZE and FACTORY PRESET

ITEM	MEMORY INITIALIZE	FACTORY RESET	REMARKS
H POSITION ADJUST DATA	INITIALIZE	NOT INITIALIZE	
V POSITION ADJUST DATA	INITIALIZE	NOT INITIALIZE	
SUB CONTRAST ADJUST DATA	INITIALIZE	NOT INITIALIZE	
SETTING DATA FOR EACH DEVICE	INITIALIZE	NOT INITIALIZE	
BBE EFFECT SETTING DATA	INITIALIZE	NOT INITIALIZE	
AUDIO AGC SETTING DATA	INITIALIZE	NOT INITIALIZE	
V CHIP RATING SETTING DATA	INITIALIZE	NOT INITIALIZE	
CCD SETTING DATA	INITIALIZE	NOT INITIALIZE	
FACTORY RESET ITEM	INITIALIZE	INITIALIZE	
WHITE BALANCE	INITIALIZE	NOT INITIALIZE	

Note: Perform pre heat-run for more than 20 min. before adjusting.

3.2 SUB-CONTRAST ADJUSTMENT

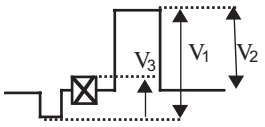
Preparation

Receive Sub-contrast adjustment signal (Fig. 1).

Adjustment

(1) Select 'SUB CONTRAST' of Service Adj. Menu. Press ▶ for over 2 seconds and have it perform automatic adjustment. When it's completed, 'Auto Adjusting' on the screen will be disappeared.

Fig. 1
Full White



(RF Input ANT A))
V_1=1.0 Vp-p (when
V_2=100IRE with
V_3=7.51IRE)

3.3 BRIGHTNESS CHECK

Preparation

(1) Start checking 20 minutes or more after the power is turned ON.
(2) Receive the color bar signal.
(3) The vertical incident illumination on the screen should be 20 lux or less.
(4) Picture Format is 16:9 standard mode.
(5) Select Day mode and reset.

Checking Procedure

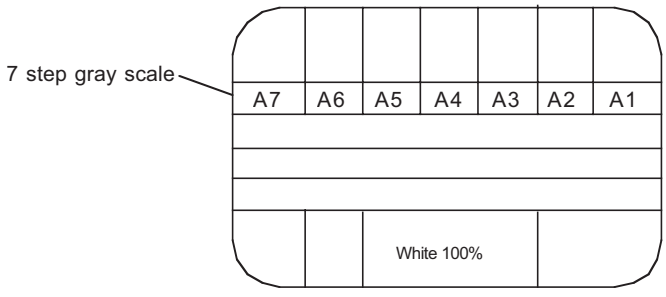
(1) Check the brightness as below.

	DW-1
Can be seen at black	A3*
Can be seen slightly from black	A5*

Note: If set black level is NG, readjust item Sub Contrast adj.

Measuring Conditions

(1) At the signal electric field strength 75± dBμ, the specification mentioned above should be satisfied.
(2) At the input electric field 46-106dBμ, there should be no abnormality.
* From color bar pattern below.



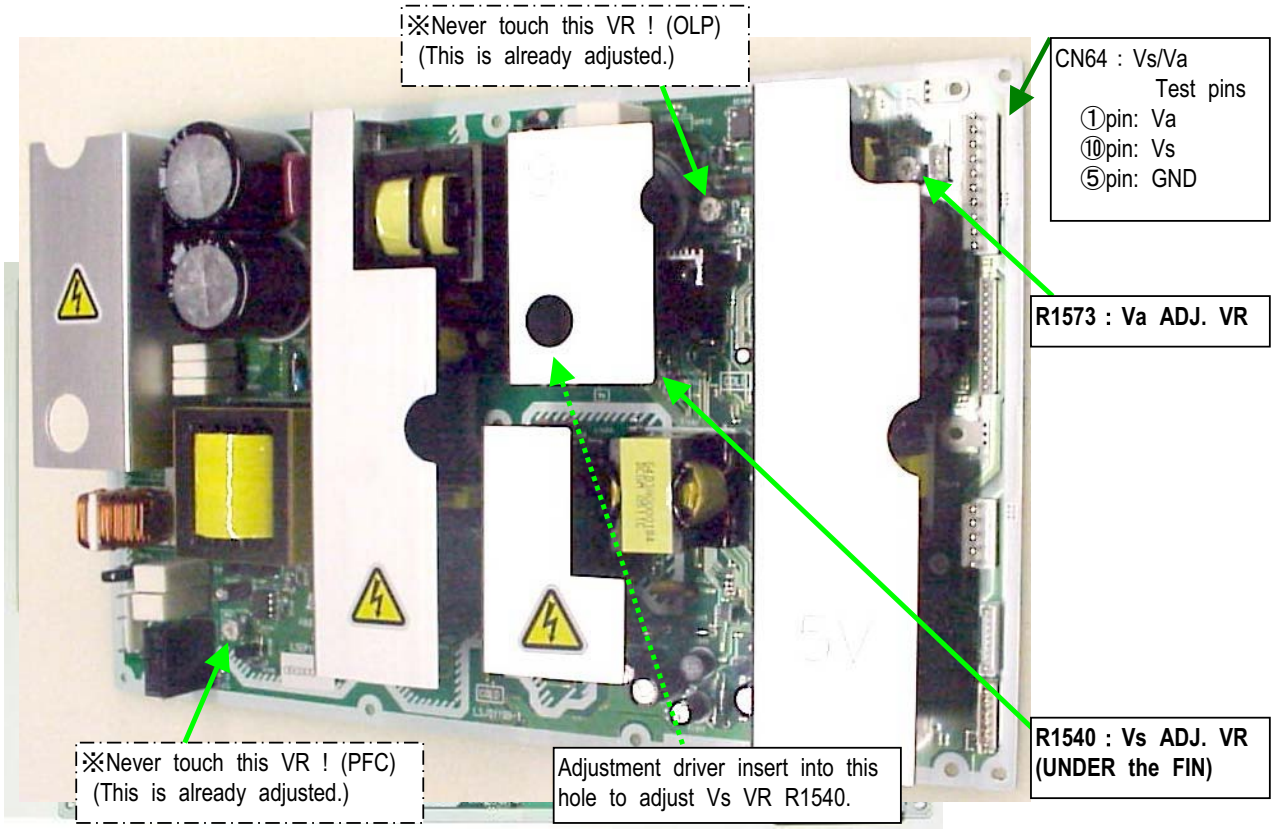
Color Bar Signal

A4 has tolerance.
A4 can be between black and Slightly from black.

BACK TO ADJUSTMENTS

4. Vs, Va voltage adjustment

Item	Power Unit Vs, Va Adjustment			Adj. point	Refer to following
Adjustment Preparations		Adjustment Procedures		Remarks	
(1)	Turn on the set and perform pre-heat run more than 1 min on burn-in screen.	(1)	Turn Vs ADJ to adjust Vs voltage to be within ±0.1V of the value specified in the label on the panel.	Permissive level of voltage in sufficient time of heat-run performed is: Vs: within±0.45V Va: within±0.55V	
(2)	Receive full black pattern signal (or video silence signal; but the power will be automatically turned off after a few seconds by power save function.)	(2)	Turn Va ADJ to adjust Va voltage to be within ±0.2V of the value specified in the label on the panel.		
(3)	Connect voltmeter (which has an error within 0.02V or less) leads to Vs (or Va) and GND test points of the power unit.	(3)	Reconfirm that Vs voltage remains within ±0.1V of the specified value. Readjust if it's outside of the margin.		
			Label example <LOT>N6 Vs= 80.0V Va=60.0V Vw=140.0V Vx=60.0V	Label position (Reference) : Upper left If it's hard to read the voltage value because of the wiring positions, write it down by a marker at visible place in advance.	


※Never touch this VR ! (OLP)
(This is already adjusted.)
CN64 : Vs/Va
Test pins
①pin: Va
⑩pin: Vs
⑤pin: GND
R1573 : Va ADJ. VR
R1540 : Vs ADJ. VR
(UNDER the FIN)
※Never touch this VR ! (PFC)
(This is already adjusted.)
Adjustment driver insert into this hole to adjust Vs VR R1540.

BACK TO ADJUSTMENTS

5 WHITE BALANCE ADJUSTMENTS

General Notes for White Balance

(1) If the incident illumination is more than 20 lux, change the environment (location, lighting, etc.) and ensure it to be less than 20 lux.
(2) At least one of the color drive codes must stay at its maximum value, FF_H.

5.1 VIDEO COLOR TEMPERATURE ADJUSTMENT (HIGH)

Preparation 1

(1) Set the output of signal generator to white raster. (Ratio:100%)
(2) Component signal

	42”	55”
Video level:	0.700Vp-p	0.280Vp-p
SYNC:	0.300Vp-p	0.286Vp-p
Set-up level:	0V	0V

(3) Input white raster signal into COMPONENT input terminal of the PDP set.
(4) Set user control to Day mode. (Picture Mode)
(5) Confirm that the mode is set as “Factory Setting Mode”.
(6) Aspect: ① Video: Expanded
②

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to “HIGH”.
(4) Ensure that Adjustment R/G/B DRIVE (HIGH) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/G/B DRIVE (HIGH) and adjust the value shown in the following:

Specification Video Color temperature (HIGH)
42" x = 0.258 ± 0.005 y = 0.273 ± 0.005 (Color temp: 12000K)
55" x = 0.264 ± 0.005 y = 0.263 ± 0.005 (Color temp: 15000K)

At least one of the data should be FF.

Remarks

(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.
(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.
(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there’s no problem.

5.2 VIDEO COLOR TEMPERATURE ADJUSTMENT (MEDIUM)

Preparation

(1) Same as “Video Color Temperature adjustment: (HIGH)”. For 55” the video level changes to 0.700Vp-p.

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to “MEDIUM”, using SEL key.
(4) Ensure that Adjustment R/G/B DRIVE (MEDIUM) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (MEDIUM) and adjust the value shown below.

Specification Video Color temperature (MED)
42" x = 0.285 ± 0.005 y = 0.293 ± 0.005 (Color temp: 9300K)
55" x = 0.285 ± 0.005 y = 0.293 ± 0.005 (Color temp: 9300K)

At least one of the data should be FF.

BACK TO ADJUSTMENTS

5.3 VIDEO COLOR TEMPERATURE ADJUSTMENT (STD)

Preparation

(1) Same as "Video Color Temperature adjustment: (HIGH)". For 55" video level changes to 0.700Vp-p.

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to "STD".
(4) Ensure that Adjustment R/G/B DRIVE (STD) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (STD) and adjust the value shown below.

Specification
Video Color temperature (STD)
42"
x = 0.314 ± 0.005
y = 0.327 ± 0.005
(Color temp: 6500K)
55"
x = 0.314 ± 0.005
y = 0.327 ± 0.005
(Color temp: 6500K)

At least one of the data should be FF.

5.4 VIDEO COLOR TEMPERATURE ADJUSTMENT (B/W)

Preparation

(1) Same as "Video Color Temperature adjustment: (HIGH)". For 55" video level changes to 0.700Vp-p.

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Ensure that Adjustment R/G/B DRIVE (B/W) are all set as FF.
(4) After receiving White Raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (B/W) and adjust the value shown below.

Specification
Video Color temperature (B/W)
42"
x = 0.335 ± 0.005
y = 0.343 ± 0.005
(Color temp: 5400K)
55"
x = 0.335 ± 0.005
y = 0.343 ± 0.005
(Color temp: 5400K)

At least one of the data should be FF.

Remarks

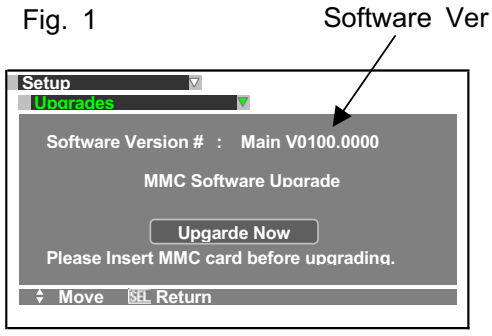
(1) Same as "Video Color Temperature adjustment (HIGH)"

6. DIGITAL MAIN CHECK

6.1 SYSTEM SOFTWARE VERSION CHECK

(1) Press Menu button on the R/C or control panel.
(2) Enter the SETUP options, and then look for UPGRADES option.
(3) The Main software version will be display V0100.0000 as shown on Fig. 1.
(4) If this version needs to be change for a design improvement or failure, please select the Upgrade Now button.

Fig. 1



(5) The upgrading process begin by filling a bar, when finish the message will say, "Upgrade complete …" when this appear unplug the TV from the AC line outlet to complete the process.
(6) Now plug again the TV and verify the new software version.
(7) The Main software version will display the latest version issue by design.

NOTE:

(1) A Service Bulletin will be sent when a new version is issued officially to the Service Department every time the software version needs to be modified.
(2) In case that the upgrade fails or when a CARD is inserted with new version and can't upgrade ; please perform the **FACTORY RESET** process to the TV, then try upgrading again.

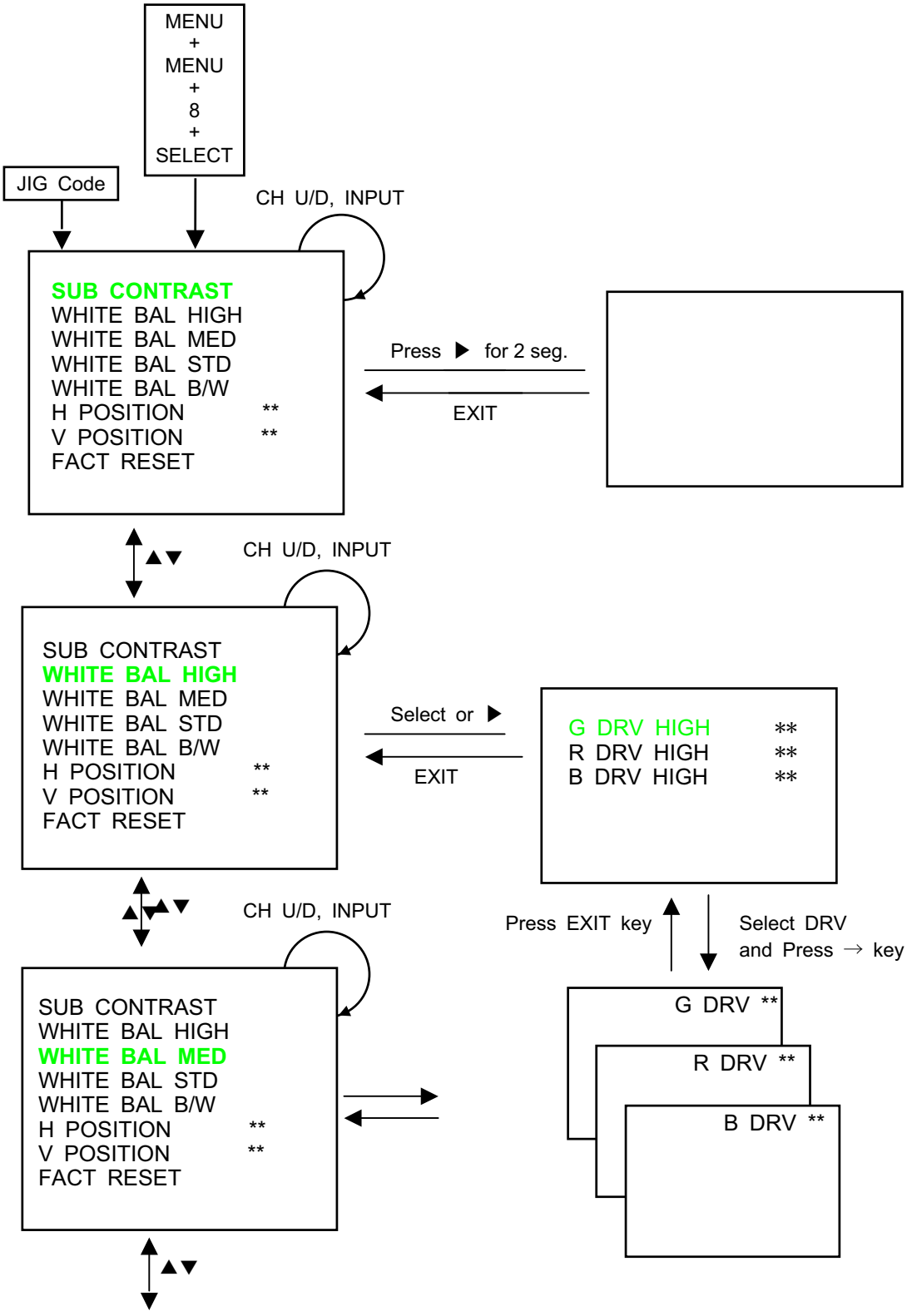
BACK TO ADJUSTMENTS

5.5 WHITE BALANCE ADJUSTMENT OSD FLOW DIAGRAM

5.5.1 Adjustment OSD Flowchart

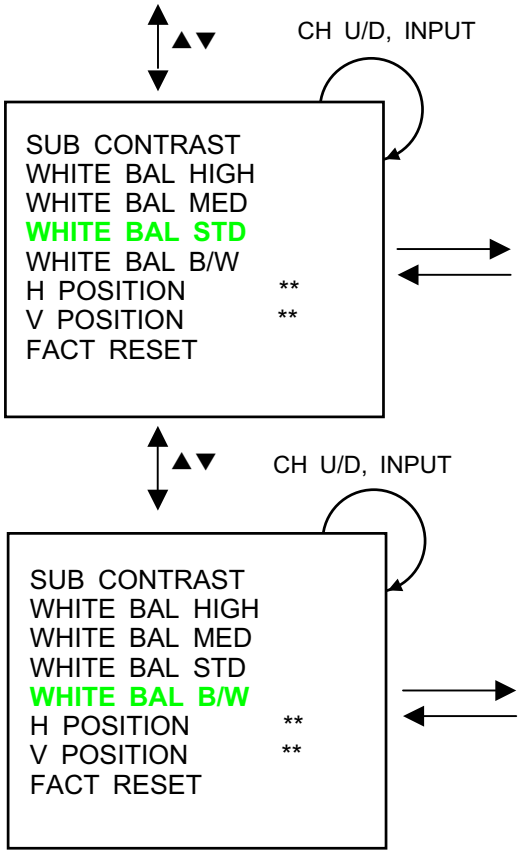
(1) Adjust Mode OSD

JIG R/C code:9C or Press [MENU] + [MENU] + [8] + [SELECT] of Control panel.



BACK TO ADJUSTMENTS

5.7.1 Adjustment OSD Flowchart (Cont.)



WHITE BALANCE
ADJUST MODE

VIDEO SETTINGS
(1) CONTRAST ; MAX
(2) COLOR,TINT,SHARP,BRIGHT ; CENTER
(3) COLOR TEMP ; HIGH

ADJUST
(1) Press ↑ ↓ to Select the G DRV,R DRV, B DRV.
(Initial position G/B DRV)
G/B DRV,B/R DRV select by the DR R and DR BG.
(2) Press ← →to adjust

BACK TO ADJUSTMENTS

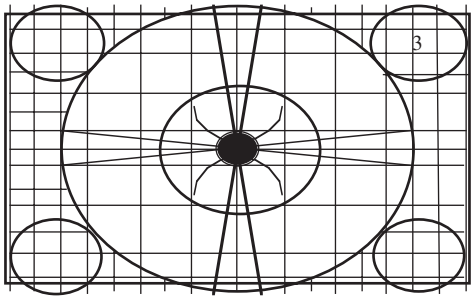
7. SCREEN CHECK

Preparation

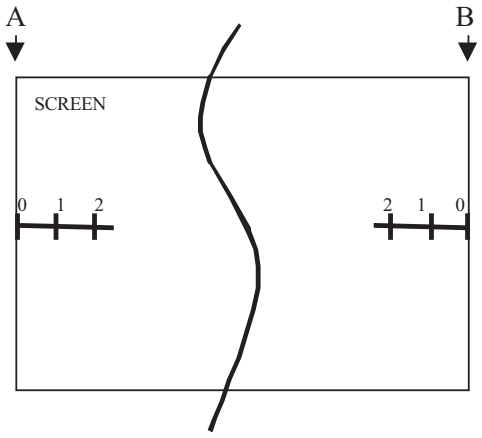
(1) Set AC120±1V.
(2) Turn on the power and leave it more than 5 min.
(3) Receive circle pattern at 4:3 Expanded mode.
(4) Input 480p and 1080i circle pattern into Component video 3. (ASPECT 16:9 Standard)

Checking

(1) Receive RF, 480p and 1080i signal, then check the following items 1~4:
1. Check the symmetry of the pattern (right/left).
2. Check the horizontal position and the balance (right/left).
3. Check the symmetry of the pattern (top/bottom).
4. Check the vertical position and the balance (top/bottom).



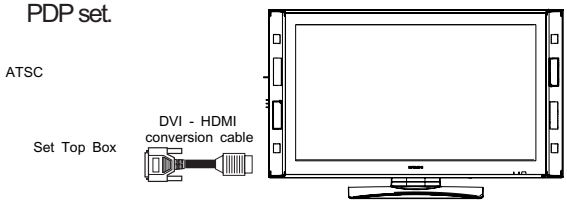
Remarks



SIGNAL	ASPECT	SPEC(A,B)
Hitachi circle pattern	16:9 Standard	0 +/- 0.5

8. HDMI adjustment

a. DVI compatibility check
Preparation
1. Prepare HDTV signal generator. (Zenith HD-SAT520)
2. Select DVI mode then 1080i format
3. Connect HDMI-DVI cable to the HDMI input on the PDP set.



b. DVI/HDCP/Timing (Display Position) Check
1. Set 1080i crosshatch with black background, with a small color bar and small multi-burst. (Confirm that the picture appears as shown below or similar)
2. Press “INFO” button on remote control to confirm that “1080i Format” indication appears.
3. Confirm that Horizontal and Vertical position meet the following spec.

Chassis	DW1-U				unit
Screen Size	42”				inch
a					mm
b					
c					
d					

9. FACTORY RESET

After all of the adjustments of main chassis are finished, perform FACTORY RESET.

(1) Enter Adjustment Mode by the method described in sub-items 1-1 and 1-2 from page 30. (“Adjustment Procedure Start-up”).
(2) From the first menu in Adjustment Mode, select FACT RESET adjustment code.
(3) Activate FACT RESET by pressing “Right” cursor key once.
(4) Other procedure to acces the FACTORY RESET is by sending the 92 hex code with a programable R/C.
(5) The procedure of the FACTORY RESET process is the following and the DATA table is shown next.

BACK TO ADJUSTMENTS

·**Process of FACTORY RESET operation.**

① A screen is colored **magenta** when FACTORY RESET start.

② A screen is colored **green** when FACTORY RESET finish normally.

③ A screen is colored **black** when FACTORY RESET finish abnormally.

(6) After FACTORY RESET, it should be unplug AC cord.Unplug and plug AC cord and then all settings and data are updated.

(7) When PDP turns ON , it will tune CH03 this is the complete operation of FACTORY RESET process.

9 . DATA TABLE OF SETTING FOR DELIVERY

USER Control Initialization

Settings for delivery (FACTORY RESET)

Function	Initial Data	Condition	DW1-U	
Input Mode	Cable		X	
Channel	03-1ch		X	
Favorite Channels	Not Registered		X	
PIP On/Off	Off		X	
PIP Mode	SPLIT		X	
POP Position	Middle Right		X	
PIP Position	Bottom Right		X	
Freeze Mode	Main Freeze (1pix)		X	
Master Volume	20 Step		X	
Video				
Picture Mode	Day		X	
Contrast	100%		X	
Brightness	50%		X	
Color	50%		X	
Tint	CENTER		X	
Sharpness	50%		X	
Color Temperature	High		X	
Black Enhancement	Middle		X	
Edge Enhancement	High		X	
Noise Reduction	Off		X	
Aspect	4:3 Expanded		X	
Auto Aspect	Off		X	
Vertical Position	0		X	
Black Side Panel	Off		X	

Audio				
Treble	50%		X	
Bass	50%		X	
Balance	CENT		X	
SRS	Off		X	
BBE	Hard		X	
Audio Source	Stereo	Analog Broadcast	X	
Internal Speakers	On		X	
Auto Noise Cancel	Off	Analog Broadcast	X	
Perfect Volume	Off		X	
Loudness	Off		X	
DTV Language	1 (English)	DTV	X	
Digital Output	Dolby Digital	DTV	X	
DRC	On	DTV	X	

BACK TO ADJUSTMENTS

9. SETTING for Delivery (continued)

Function	Initial Data	Condition	DW1-U	
TV Guide On Screen				
TV Guide On Screen	-	Analog Broadcast /DTV	-	
Channel Manager				
Signal Meter	-	DTV	X	
Auto Channel Scan			X	
Cable	-		X	
Cable Source	CATV1		X	
Air	-		X	
Channel List			X	
FAV	Not set		X	
CH#	Registered CH		X	
Scan	On		X	
Lock	Off		X	
ID	-		X	
Locks				
Change Access Code	“0000”,”7777”		X	
Engage Lock				
Set Channel Lock	Not set		X	
Set Front Panel Lock	Not set		X	
Movie Rating	Not set		X	
TV Rating	Not set		X	
Canadian Rating (Eng.)	Not set		X	
Canadian Rating (Frn.)	Not set		X	
Timers				
Set the Clock				
Time Zone	PST		X	
Daylight Savings	Off		X	
Time	Not Registered		X	
Date	2005 01 01		X	
Set Sleep Timer	Not set		X	
Set Day/Night Timer				
Activate	Not set		X	
Day Start	Not set		X	
Day End	Not set		X	
Set Event Timer	Not set		X	

9. SETTING for Delivery (continued)

Function	Initial Data	Condition	DW1-U	
Setup				
Magic Focus???				
Menu Preference				
Menu Language	English		X	
Menu Background	Shaded		X	
Set The Inputs				
Input1 Rename	None		X	
Input2 Rename	None		X	
Input3 Rename	None		X	
Input4 Rename	None		X	
Input4 Auto Link (Auto/Remote/Off)	Off		X	
Input5 Rename	None		X	
Set the AV Net	(Wizard will be starting.)		-	
Set Closed Caption				
Caption Display	Auto		X	
Mode (Captions/Text)	Captions		X	
Channel (1/2/3/4)	Channel 1		X	
Digital Captions				
Service (1/2/3/4/5/6)	1		X	
Language	(English)		X	
Font (Default,1/2/3/4/5/6/7/8)	Default		X	
Size (Small/Standard/Large)	Standard		X	
Style (Standard/High Visibility)	Standard		X	
Set Monitor Out				
Video Out (TV Tuner Out / Monitor)	Monitor		X	
Audio Out (Fixed/Variable)	Fixed		X	
Cable CARD Info	Not set		X	
Upgrades	-		X	
Quick Start Up	Not set		X	
Digital Input - HDMI	Not detected		1	

CH 6

10. I²C Adjustment Parameter List

1st page (1/2)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
SERVICE	SERVICE		OFF	
TA1360 (88H)				
SUB BRIGHT	[ISF Mode] Sub Brightness	00～FF	3F	
WHITE BAL	White Balance Mode (TA1360 88H)			
G DRIVE(HIGH)	[ISF Mode] Color Temperature: High Green/Red Drive Gain Adjustment	00～7F	3F	
R DRIVE(HIGH)			3F	
R CUTOFF(HIGH)	[ISF Mode] Color Temperature: High Red/Green/Blue Cutoff Adjustment	00～FF	7F	
G CUTOFF(HIGH)			7F	
B CUTOFF(HIGH)			7F	
G DRIVE(MED)	[ISF Mode] Color Temperature: Medium Green/Red Drive Gain Adjustment	00～7F	4A	
R DRIVE(MED)			4E	
R CUTOFF(MED)	[ISF Mode] Color Temperature: Medium Red/Green/Blue Cutoff Adjustment	00～FF	7F	
G CUTOFF(MED)			7F	
B CUTOFF(MED)			7F	
G DRIVE(STD)	[ISF Mode] Color Temperature: Standard Green/Red Drive Gain Adjustment	00～7F	52	
R DRIVE(STD)			56	
R CUTOFF(STD)	[ISF Mode] Color Temperature: Standard Red/Green/Blue Cutoff Adjustment	00～FF	7F	
G CUTOFF(STD)			7F	
B CUTOFF(STD)			7F	

BACK TO ADJUSTMENTS

10. I²C Adjustment Parameter List (continued)

1st page (2/2)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
WHITE BAL	White Balance Mode (TA1360 88H)			
G DRIVE (B/W)	[ISF Mode] Color Temperature: Black/White Green/Red Drive Gain Adjustment	00～7F	58	
R DRIVE (B/W)			64	
R CUTOFF (B/W)	[ISF Mode] Color Temperature: Black/White Red/Green/Blue Cutoff Adjustment	00～FF	7F	
G CUTOFF (B/W)			7F	
B CUTOFF (B/W)			7F	
H POSITION	[ISF Mode] Horizontal Position Adjustment 00: .10%~ 7F: +10%	00～7F	42	
SEINE				
V POSITION	[ISF Mode] Vertical Position Adjustment	00～8FCh	465h	
FACTORY RESET	FACTORY RESET	—	—	

10. I²C Adjustment Parameter List (continued)

2nd page (1/2)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
SEINE				
TV_GUiDE	Don't care			
TV_GUiDE	Don't care			
TV_GUiDE	Don't care			
UEI				
iR_BLASTER				
iR_BLASTER				
TC90103				
H_TiMiNG	VBIDLY: Slicer H Timing Delay (ID1/WSS/CCD/G-Gide)	00～0F	08	
V_PHASE	VBIVAD: Slicer V Phase (ID1/WSS/CCD/G-Gide)	00～07	04	
CCD_READ_oUT	CCDON: CCD Slice Read Output	00～01	01	
CCD_SLiCE_CoNT	CSLICES: CCD Slice Control	00～01	00	
CCD_SLiCE_LEVEL	CSLICEL: CCD Slice Level	00～03	00	
CCD_SB_DET	CSTMOD: CCD SB Detect	00～01	00	
CCD_FiELD_SEL	CCDMOD: CCD Field Select	00～03	02	
iD1_READ_oUT	ID1ON: ID1 Slice Read Output	00～01	01	
iD1_SLiCE_CoNT	ISLICES: ID1 Slice Control	00～01	00	
iD1_SLiCE_LEVEL	ISLICEL: ID1 Slice Level	00～03	00	
iD1_AMP	IRWIDON: ID1 Amplitude Detect	00～01	00	
iD1_PHASE_SEL	IEDGES: ID1 Phase Select	00～01	00	
iD1_PHASE_WiDTH	IRTIMS: ID1 Detection Phase Width	00～01	00	

10. I²C Adjustment Parameter List (continued)

2nd page (2/2)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103				
G_READ_oUT	GGSON: Guide Slice Read Output	00～01	01	
G_DETECT	GGSJDG: Guide Detection Sensitivity	00～01	01	
G_SLiCE_LEVEL	GGSLV: Guide Slice Level	00～03	00	
CLoCK_RUN_iN	GGPKDET: Guide Clock Run In Detect	00～01	00	
READ_DATA_oRDER	SLDSLT: Guide Read Out order	00～01	00	
ADD_DATA	GGSIGON: Guide Add Data Function	00～01	00	
LiNE_10_25	Line 10～25	0000～FFFF	0000	
Sub Micro				
VBi_SLiCER_S	Sub VBI (CCD/V Chip) Adjustment			
SAMPLiNG				
POLLiNG				
START				
TiMEoUT				
STATUS				
Seine/Sub Micro				
CLoCK_TEST				
AFC_TEST				
MAiNTENANCE				
MEMoRY_iNiTiALiZE				

10. I²C Adjustment Parameter List (continued)

Seine (1/4)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
SEINE				
001	Capture Picture Sync Delay 00h: Delay Adjustment, 1: Through	00～01	00	
002	Active area top field V sync phase 00h: odd field, 01h: even field	00～01	00	
003	Vertical Delay	000～7FF	00	
004	Horizontal Delay	000～FFF	00	
005	Picture Horizontal Sync Up Position	0000～1130	898	
006	Picture Horizontal Sync Down Position	0000～1130	898	
007	Picture Horizontal Blanking Up Position	0000～1130	898	
008	Picture Horizontal Blanking Down Position	0000～1130	898	
009	Picture Vertical Blanking Up Position	000～8FC	465	
010	Picture Vertical Blanking Down Position	000～8FC	465	
011	Picture Clamp Horizontal Up Position	0000～1130	898	
012	Picture Clamp Horizontal Down Position	0000～1130	898	
013	Picture Clamp Vertical Position Mask Start Position	000～8FC	465	
014	Picture Clamp Vertical Position Mack End Position	000～8FC	465	
015	Picture Black Level Distinction Horizontal Up Position	0000～1130	898	
016	Picture Black Level Distinction Horizontal Down Position	0000～1130	898	
017	Picture Black Level Vertical Mask Start Position	000～8FC	465	
018	Picture Black Level Vertical Mask End Position	000～8FC	465	
019	U,V Output Gain Mode 00h: SMPTE, 01h: Beta Cam	00～01	00	
020	Horizontal Sync Input Delay	00～03	00	

10. I²C Adjustment Parameter List (continued)

Seine (2/4)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
SEINE				
021	Vertical Sync Input Delay	00～03	00	
022	Horizontal Filter Switch for Y 00h: through, 01h: 0.25fs	00～01	00	
023	Horizontal Filter Switch for U 00h: through, 01h: 0.25fs, 02h: 0.055fs, 03h: 0.037fs	00～03	00	
024	Horizontal Filter Switch For V 00h: through, 01h: 0.25fs, 02h: 0.055fs, 03h: 0.037fs	00～03	00	
025	Plain Bland Out Color 00h: YUV_BT709, 01h: YUV_BT601	00～01	00	
026	Picture Digital Output Select 00h: Normal, 01h: Color Bar	00～01	00	
027	Setup 00h: off, 01h: on	00～01	00	
028	Noise Reduction Switch for Y 00h: Not Round, 01h: Round NTSC/480i Input only	00～01	01	
029	Y Moving Detection Band for Noise Reduction 00h: Narrowband, 01h: Wideband NTSC/480i Input only	00～01	00	
030	Y Moving Horizontal Extension for Noise Reduction 00h:OFF, 01h:ON NTSC/480i Input only	00～01	01	
031	Y Signal Round Coefficient for Noise Reduction NTSC/480i Input only	00～0D	0A	
032	Y Frame Difference Limit for Noise Reduction NTSC/480i Input only	00～1F	03	
033	Color Signal Noise Reduction Switch 00h: Not Round, 01h: Round NTSC/480i Input only	00～01	01	
034	Color Moving Detection Band for Noise Reduction 00h: Narrowband, 01h: Wideband NTSC/480i Input only	00～01	00	
035	Color Moving Horizontal Extension foe Noise Reduction 00h:OFF, 01h:ON NTSC/480i Input only	00～01	01	

10. I²C Adjustment Parameter List (continued)

Seine (3/4)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
SEINE				
036	Color Signal Round Coefficient for Noise Reduction NTSC/480i Input only	00～0D	0A	
037	Color Signal Frame Difference Limit for Noise Reduction NTSC/480i Input only	00～1F	03	
038	Enhance Movement Mode 00h: Enhancer & 2nd V filter OFF 01h: Enhancer ON 02h: 2nd V filter ON 03h: Reserved	00～03	00	
039	Enhancer Movement Mode Select 00h: 1H, 01h: 2H	00～01	00	
040	Noise Distinction Value	00～10	00	
041	Noise Reduction Gain	00～07	00	
042	Vertical Enhancer Gain 1/16step 0x00: OFF, 0x20: 2 times	00～20	00	
043	Vertical Enhancer Coring Value	00～0F	00	
044	Vertical Enhancer Turning Position	00～FF	00	
045	Horizontal Enhancer Gain 1/16step 0x00: OFF, 0x20: 2 倍	00～20	00	
046	Horizontal Enhancer Coring Value	00～0F	00	
047	Horizontal Enhancer Turning Position	00～FF	00	
048	Horizontal Enhancer Coefficient Z6	00～FF	00	
049	Horizontal Enhancer Coefficient Z5	00～FF	00	
050	Horizontal Enhancer Coefficient Z4	00～FF	00	
051	Horizontal Enhancer Coefficient Z3	00～FF	00	
052	Horizontal Enhancer Coefficient Z2	00～FF	00	
053	Horizontal Enhancer Coefficient Z1	00～FF	00	
054	Horizontal Enhancer Coefficient Z0	00～FF	00	

10. I²C Adjustment Parameter List (continued)

Seine (4/4)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
SEINE					
055	Odd/Even Field Horizontal Active Picture Data Start Point	ANT/NTSC	000～6B4	0F8	
056		480i_YPbPr	000～35A	0F4	
057		480i_HDMI	000～6B4	000	
058		480p_YPbPr	000～35A	078	
059		480p_HDMI	000～35A	000	
060		1080i_YPbPr	000～898	0E0	
061		1080i_HDMI	000～898	000	
062		720p_YPbPr	000～672	120	
063		720p_HDMI	000～672	000	
064		VGA_HDMI	000～35A	000	
065	S/N Detection Setting (Receiving Mode Border Line Setting)	Mode 1-2	00～FF	19	
066		Mode 2-3	00～FF	32	
067		Mode 3-4	00～FF	4B	
068		Mode 4-5	00～FF	64	

10. I²C Adjustment Parameter List (continued)

TA1360 (1/5)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX)	
				DW1-U	
TA1360					
001	[ISF Mode] RGB Output Mode Switch 00: Normal, 01: R only, 02: G only, 03: B only		00～03	00	
002	[ISF Mode] Brightness Offset 1	Black Enhancement Middle	00～7F	3F	
003		Black Enhancement Low	00～7F	3F	
004		Black Enhancement Off	00～7F	3F	
005	[ISF Mode] Brightness Offset 2	480i/480p/1080i/720p	00～7F	3F	
006	[ISF Mode] Sub Contrast 00h: -3.4 dB ～ 1Fh: +2.6 dB		00～1F	12	
007	[ISF Mode] Color (Center Adjustment) 00h: -20 dB ～ 7Fh: +4.5 dB	ANT/NTSC	00～7F	46	
008		480i/480p	00～7F	4B	
009		1080i/720p	00～7F	4C	
010	[ISF Mode] Color Offset	Color Temperature Medium	00～3F	1F	
011		Color Temperature Standard	00～3F	1F	
012		Color Temperature B/W	00～3F	1F	
013	[ISF Mode] Tint (Center Adjustment) 00h: -32degree ～ 7Fh: +32degree	ANT/NTSC	00～7F	41	
014		480i/480p	00～7F	3F	
015		1080i/720p	00～7F	3F	
016	[ISF Mode] Tint Offset	Color Temperature Medium	00～3F	1F	
017		Color Temperature Standard	00～3F	1F	
018		Color Temperature B/W	00～3F	1F	
019	[ISF Mode] Sharpness(Center Adjustment) 10 dB ～ +15 dB	ANT/NTSC	00～7F	20	
020		480i/480p	00～7F	20	
021		1080i/720p	00～7F	1F	

10. I²C Adjustment Parameter List (continued)

TA1360 (2/5)

Adjustment Mode OSD	Adjustment Item			Adjustment Range(HEX)	Initial Data(HEX)	
					DW1-U	
TA1360						
022	[ISF Mode] R-Y/B-Y Phase 00h: 90 degree, 0Fh: 109 degree		ANT/NTSC	00～0F	00	
023			480i/480p	00～0F	00	
024			1080i/720p	00～0F	00	
025	[ISF Mode] R-Y/B-Y Gain 00h: 0.56 ～ 0Fh: 0.86	ANT/NTSC	Color Temp. High	00～0F	09	
026			Color Temp. Medium	00～0F	07	
027			Color Temp. Standard	00～0F	05	
028			Color Temp. B/W	00～0F	02	
029		480i/480p	Color Temp. High	00～0F	0A	
030			Color Temp. Medium	00～0F	08	
031			Color Temp. Standard	00～0F	06	
032			Color Temp. B/W	00～0F	03	
033		1080i/720p	Color Temp. High	00～0F	07	
034			Color Temp. Medium	00～0F	05	
035			Color Temp. Standard	00～0F	03	
036			Color Temp. B/W	00～0F	02	
037	[ISF Mode] G-Y/B-Y Phase 00h: 232.5 degree, 0Fh: 255 degree		ANT/NTSC	00～0F	02	
038			480i/480p	00～0F	02	
039			1080i/720p	00～0F	03	

10. I²C Adjustment Parameter List (continued)

TA1360 (3/5)

Adjustment Mode OSD	Adjustment Item			Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TA1360						
040	[ISF Mode] G-Y/B-Y Gain 00h: 0.3 ～ 0Fh: 0.45	ANT/NTSC	High	00～0F	01	
041			Medium	00～0F	02	
042			Standard	00～0F	03	
043			B/W	00～0F	04	
044		480i/480p	High	00～0F	02	
045			Medium	00～0F	03	
046			Standard	00～0F	04	
047			B/W	00～0F	05	
048		1080i/720p	High	00～0F	00	
049			Medium	00～0F	01	
050			Standard	00～0F	02	
051			B/W	00～0F	03	
052	[ISF Mode] BLACK STRETCH POINT		Black Enhancement High	00～07	05	
053			Black Enhancement Middle	00～07	03	
054			Black Enhancement Low	00～07	01	
055	[ISF Mode] DC Restoration Point 00h: 0% ～ 07h: 47%			00～07	00	
056	[ISF Mode] DC Restoration Rate 00h: 100% ～ 07h: 135%			00～07	00	
057	[ISF Mode] DC Restoration Limit Point 00h: 60%, 01h: 73%, 02h: 87%, 03h: 100%			00～03	00	
058	[ISF Mode] Dynamic ABL Detection Point 00h: MIN ～ 03h: MAX			00～03	03	
059	[ISF Mode] Dynamic ABL Gain 00h: MIN ～ 03h: MAX			00～03	00	

10. I²C Adjustment Parameter List (continued)

TA1360 (4/5)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TA1360					
060	Sand castle Pulse Switch 00h: Internal, 01h: External Input		00～01	01	
061	Aperture Control Peak f0 00h: 15 MHz, 01h: 8.8 MHz , 02h: 7.5 MHz, 03h: 5 MHz	ANT/NTSC	00～03	01	
062		480i/480p	00～03	01	
063		1080i/720p	00～03	00	
064	Color Limiter Level Switch 00h: 1.65 Vp-p, 01h: 2 Vp-p		00～01	01	
065	Color SRT Gain 00h: min ～ 03h: max		00～03	00	
066	Color SRT Frequency 00h: 4.3 MHz ～ 01h: 5.8 MHz		00～01	01	
067	VM Phase 00h: -37.5 ns, 05h: Normal, 07h: +15 ns	ANT/NTSC 480i/480p	00～07	06	
068		1080i/720p	00～07	04	
069	Color Detail Enhancer 00h: min ～ 03h: max		00～03	00	
070	DCU RGB Brightness 00h: -20 IRE ～ 7Fh: +20 IRE		00～7F	3F	
071	DCU RGB Contrast 00h: -17 dB ～ 7Fh: 0 dB		00～7F	6D	
072	DC Restoration Ratio Switch 00h: 100% less, 01h: 100% over		00～01	00	
073	Color γ Correction Point 00h: OFF, 01h: 0.23 Vp-p, 02h: 0.37 Vp-p, 03h: 0.52 Vp-p		00～03	00	
074	Component Dynamic Y/C Correction Select 00h: OFF, 01h: min, 02h: mid, 03h: max		00～03	00	
075	APL / Black Stretch Start Point 00h: 0 IRE ～ 03h: 23 IRE		00～03	00	

10. I²C Adjustment Parameter List (continued)

TA1360 (5/5)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
TA1360				
076	Black Level Auto Correction Switch D2 00h: OFF, 01h: ON	00～01	01	
077	Black Detection Level Switch D1 00h: 3 IRE, 01h: 0 IRE	00～01	01	
078	Black Stretch Area Correction Switch D0 00h: ON, 01h: OFF	00～01	01	
079	SRT (Super Real Transient) Gain 00h: MIN ～ 1Fh: MAX	00～1F	10	
080	White Character Correction Amplitude 00h: min ～ 07h: max	00～07	07	
081	ABL Detection Point 00h: MIN ～ 07h: MAX	00～07	07	
082	ABL Gain 00h: MIN ～ 07h: MAX	00～07	00	
083	Dynamic Y Gamma Gain vs. Dark Area 00h: OFF ～ 07h: MAX(+6 dB)	00～03	00	
084	Dynamic Y Gamma Gain vs. Bright Area 00h: OFF ～ 07h: max	00～07	00	
085	Static Y Gamma Black Gain 00h: OFF, 01h: MIN(0 DB) ～ 07h: MAX(+6 DB)	00～07	00	
086	Static Y Gamma Bright Gain 00h: OFF, 01h: MIN(0 DB) ～ 03h: MAX(-6 DB)	00～03	03	
087	Y Gamma Switch 00h: OFF, 01h: ON	00～01	00	
088	Y Detail Control 00h: MIN(Trap) ～ 0Fh: MAX(+6 dB)	00～0F	07	
089	Y Group Delay Control 00h: MIN(Trap) ～ 0Fh: MAX(+6 dB)	00～0F	09	
090	White Peak Blue Point 00h: 55 IRE ～ 07h: 105 IRE	00～07	00	
091	White Peak Blue Gain 00h: min(+2 dB) ～ 07h: max(+9.5 dB)	00～07	00	
092	High Bright Color Switch 00h: OFF, 01h: ON	00～01	00	
093	White Peak Suppressor Level 00h: 110 IRE, 01h: 130 IRE	00～01	01	
094	Blue Stretch Gamma Correction 00h: OFF, 01h: ON	00～01	00	
095	Green Stretch 00h: OFF ～ 03h: MAX	00～03	00	
096	Blue Stretch Gain 00h: OFF ～ 03h: MAX(+4 dB)	00～03	00	
097	Blue Stretch Point 00h: MIN(30 IRE)～ 03h: MAX(45 IRE)	00～03	00	
098	Black Stretch Characteristic Switch 1 (OFF～MAX)	00～01	00	
099	Black Stretch Characteristic Switch 2 (OFF～MAX)	00～01	00	

10. I²C Adjustment Parameter List (continued)

TC90103 (1/12)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i				
001	3D Motion Detection Select 00h:Compulsion Standard, 01h:Compulsion Still Picture, 02h:MOVE, 03h:MANU		00～03	03	
002	YES Mode 00h:Mode1, 01h:3Line+3DNR, 02h:BPF+3DNR, 03h:Mode2		00～03	03	
003	3D Y Noise Reduction Limiter Level 00h:Level Small～07h:Level Big		00～07	06	
004	3D Color Noise Reduction Round Coefficient 00h:×1, 01h:×1/2, 02h:×3/4, 03h:OFF		00～03	02	
005	3D Y Noise Reduction Gain 00h:OFF～07h:×0.875		00～07	00	
006	3D Color Noise Reduction Limiter Level 00h:Level Small～07h:Level Large		00～07	05	
007	3D Color Round Coefficient 00h:×1, 01h:×1/2, 02h:×3/4h, 03h:OFF		00～03	01	
008	3D Color Noise Reduction Gain 00h:OFF～07h:×0.875		00～07	00	
009	Vertical Enhancer Gain 00h:OFF, 01h:×1/8, 02h:×1/4, 03h:×1/2		00～03	03	
010	Vertical Enhancer Turning Point 00h:6 IRE, 01h:9 IRE, 02h:13 IRE, 03h:16 IRE		00～03	01	
011	Vertical Enhancer Coring 00h:OFF, 01h:0.8 IRE, 02h:1.6IRE, 03h:2.3 IRE		00～03	01	
012	Sharpness f0 00h:4.2MHz, 01h:3.3MHz		00～01	00	
013	Pre-Enhancer 00h:OFF, 01h:ON		00～01	00	
014	Sharpness Gain 00h: OFF,	ANT/NTSC	00～0F	01	
015	01h: 1.02dB, 02h: 1.94dB, 03h: 2.77dB, 04h: 3.52dB, 05h: 4.22dB, 06h: 4.86dB, 07h: 5.46dB, 08h: -6.02dB, 09h: -5.00dB, 0Ah: -4.08dB, 0Bh: -3.25dB, 0Ch: 2.50dB, 0Dh: -1.80dB, 0Eh: -1.16dB, 0Fh: -0.56 dB	Y/C/480i	00～0F	01	

10. I²C Adjustment Parameter List (continued)

TC90103 (2/12)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i				
016	Sharpness/Noise Cancel Coring 00h:0.8 IRE, 01h:1.6 IRE, 02h:3.2 IER, 03h:6.4 IRE	ANT/NTSC	00～03	01	
017		Y/C/480i	00～03	01	
018	Noise Cancel Gain 00h:OFF, 01h:×1/4, 0h2:×1/2, 03h:×1		00～03	00	
019	LTI Gain (LTI = Luminance Transient Improvement) 00h:OFF, 01h:×1/8, 02h:×1/4, 03h:×1/2		00～03	03	
020	LTI Coring Level (LTI = Luminance Transient Improvement) 00h:0.8 IRE, 01h:1.6 IRE, 02h:3.2 IER, 03h:6.4 IRE		00～03	00	
021	Chrominance Delay 00h:-296ns～0Fh:259ns	ANT	00～0F	08	
022		NTSC/480i	00～0F	08	
023		Y/C	00～0F	08	
024	CTI Gain (CTI = Chrominance Transient Improvement) 00h:OFF, 01h:×1/8, 02h:×1/4, 03h:×1/2		00～03	01	
025	CTI Coring Level (CTI = Chrominance Transient Improvement) 00:0.2 IRE, 01:0.8 IRE, 02:1.6 IRE, 03:3.2 IRE		00～03	00	
026	LTI f0 (LTI = Luminance Transient Improvement) 00h:3.2MHz, 01h:2.2MHz		00～01	01	
027	CTI f0 (CTI = Chrominance Transient Improvement) 00h:1.7MHz, 01h:3.4MHz		00～01	01	
028	Contrast Control 00h:×1/2～40h:×1～FFh:×2.4		00～FF	45	
029	Brightness (Y Output Offset) 80h:-128Lsbh～00h:OFF～7Fh:+127(10Bit)		00～FF	7D	
030	Cr Output Gain 08h:×0.5 ～ 00:×1 ～ 07:×1.4		00～0F	08	
031	Cb Output Gain 08h:×0.5 ～ 00h:×1 ～ 07h:×1.4		00～0F	08	
032	Cr Output Offset 08h:-8LSB ～ 00h:0 ～ 07h:+7LSB(10Bit)		00～0F	08	
033	Cb Output Offset 08h:-8LSB ～ 00h:0 ～ 07h:+7LSB(10Bit)		00～0F	08	
034	Phase Control 80h:-45° ～ 00h:0° ～ 7Fh: +43.6°		00～7F	40	
035	Cb Delay 00h:Cb Preceding, 01h:Cr Delay		00～01	00	

10. I²C Adjustment Parameter List (continued)

TC90103 (3/12)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i				
036	Demodulation Angle 00h: 0° ～ 3Fh:+45°		00～3F	00	
037	Color Killer Level 00h:-40dB ～ 07h:-30dB		00～07	00	
038	ACC Level (ACC = Auto Color Level) 00h: Min ～ 0Fh: Max [08h: Center]		00～0F	08	
039	ACK Hysteresis (ACK = Auto Color Killer) 00h: Small, 01h: Large		00～01	01	
040	2'nd BPF/TRAP on/off 00h:ON, 01h:OFF		00～01	00	
041	2'nd BPF/TRAP bpf/trap 00h:Trap, 01h:BPF		00～01	00	
042	TRAP1 00h:ON, 01h:OFF		00～01	01	
043	TRAP2 00h:ON, 01h:OFF		00～01	01	
044	Take Off Filter 00h:OFF, 01h:BPF ON, 02h:Min ～ 07h:Max	ANT (RF Input)	00～07	07	
045		NTSC/480i	00～07	01	
046	Y Digital Clamp 00h:OFF, 01h:ON		00～01	00	
047	BSRC Filter 00h:ON, 01h:OFF		00～01	01	
048	Chrominance Digital Clamp 00h:OFF, 01h:ON		00～01	01	
049	Y Noise Cancel Limiter 00h:4lsb, 01h:8lsb, 02h:16lsb, 03h:32lsb		00～03	00	
050	Y Noise Cancel Gain 00h:OFF, 01h:×1, 02h:×1.5, 03h:×2		00～03	01	
051	Chrominance Noise Cancel Limiter 00h:1lsb, 01h:2lsb, 02h:4lsb, 03h:8lsb		00～03	00	
052	C Noise Cancel Gain 00h:OFF, 01h:×1, 02h:×1.5, 03h:×2		00～03	00	
053	Horizontal Dot Obstruction Reduction 00h:OFF, 01h:×0.16, 02h:×0.17, 03h:×0.18		00～03	03	
054	COMB+ 00h:OFF, 01h:ON		00～01	00	
055	1 Line Dot Improvement 00h:OFF, 01h:ON		00～01	01	
056	Vertical Y Noise Cancel Limiter 00h:8lsb, 01h:16lsb		00～01	00	
057	Vertical Y Noise Cancel Gain 00h:×1, 01h:×2		00～01	00	

10. I²C Adjustment Parameter List (continued)

TC90103 (4/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
058	Vertical Y ON 00h:OFF, 01h:ON	00～01	00	
059	C NY Limiter 00h:16lsb, 01h:24lsb	00～01	00	
060	C NC Gain	00～01	00	
061	C-NC ON 00h:OFF, 01h:ON	00～01	00	
062	IIR Filter 00h:OFF, 01h:ON	00～03	03	
063	Output Peak Limiter 00h:OFF, 01h:ON	00～01	00	
064	AFC Integrate Gain Switch	00～0F	03	
065	AFC Proportional Gain Switch	00～0F	0B	
066	Linear Gain Switch at Phase Large Error	00～0F	08	
067	No Linear Area 2nd Gain Switch	00～0F	07	
068	Linear Gain Switch at Phase Small Error	00～0F	02	
069	Integrate Value Reset ON at Limit 00h:OFF, 01h:ON	00～01	00	
070	Linear Area Width Setting for NTSC/480i	00～07	05	
071	Sync Separation Input Select 00h:Internal, 01h:CsyncH, 02h:CsyncL, 03h:VsyncH, 04h:Internal(OFF_SET), 07h:Free run	00～07	00	
072	AFC Integrate Relay 00h:OFF, 01h:ON	00～01	01	
073	Phase Error Gain Up 00h:ON, 01h:00×2, 02h:00×4, 03h:00×8	00～03	03	
074	Phase Error Maximum Linear Area Width Setting 00h:OFF, 01h:LRW0＋16'h5000, 02h:LRW0＋16'h6000, 03h:LRW0＋16'h7000	00～03	03	
075	Horizontal Standard Phase Adjustment 20h:-4.7µs ～ 00h:±0 ～ 1Fh:+4.59µs (1/6.75MHz_Step)	00～3F	20	
076	Horizontal Separation Level 00h:30%, 01h:40%	00～01	00	
077	Half Horizontal Killer 00h:OFF, 01h:ON	00～01	01	

10. I²C Adjustment Parameter List (continued)

TC90103 (5/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
078	Vertical Standard Setting 04h:+4H ～ 00h:Center ～ 03h:－3H	00～07	04	
079	External VD Phase Setting 00h:Center, 01h:+1.99us, 02h:+3.97us, 03h:＋5.96us, 04h:-7.94us, 05h:-5.96us, 06h:-3.97us, 07h:-1.99us	00～07	04	
080	VD Output Control 00h:Always Input Sync 01h:DET50 02h/03h: TVM[1]	00～03	00	
081	Field Distinction Horizontal Phase Setting 00h:-5.7us, 01h:-8.2us, 02h:-10.7us, 03h:-13.2us, 04h:-15.7us, 05h:-18.4us, 06h:-20.9us, 07h:-23.2us	00～07	04	
082	Vertical Counter Tolerance 00h:-H/8～+H/4, 01h:±H/8	00～01	00	
083	Vertical Counter Limiter 00h:OFF, 01h:ON	00～01	00	
084	Vertical Jitter Remove 00h:OFF, 01h:ON	00～01	00	
085	Field Distinction at Non Standard 00h:Reverse at Every 1V, 01h:Low	00～01	00	
086	Integrate Center Level Setting for Vertical Separation 00h:5/16, 01h:1/2	00～01	01	
087	Y Horizontal Edge Detection Level 00h:OFF, 01h:6 IRE, 02h:3 IRE, 03h:1.5 IRE	00～03	01	
088	1 Field Y Detection Slope, Color Motion Picture Edge 00h:1/2 ～ 03h:∞[02]	00～03	02	
089	1 Field Y Detection Offset, Color Motion Picture Edge 00h:Still Picture ～0Fh:Motion Picture [0C: Center]	00～0F	0A	
090	Y Vertical Edge Detection Level 00h:OFF, 01h:12 IRE, 02h:5 IRE, 03h:2 IRE	00～03	01	
091	1 Field Y Detection Slope, Color Motion Picture Smooth 00h:1/2 ～ 03h:∞[02]	00～03	02	
092	1 Field Y Detection Offset, Color Motion Picture Edge 00h:Still Picture ～ 0Fh:Motion Picture [0C: Center]	00～0F	0C	
093	Color Motion Picture Distinction Standard 00h:8%, 01h:16%, 02h:24%, 03h:32%	00～03	01	
094	1 Field Y Detection Slope, Color Still Picture Edge 00h:1/2 ～ 03h:∞[02]	00～03	01	
095	1 Field Y Detection Offset, Color Still Picture Edge 00h:Still Picture ～ 0Fh:Motion Picture [0C: Center]	00～0F	00	

10. I²C Adjustment Parameter List (continued)

TC90103 (6/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
096	Y Motion Picture Distinction Standard 00h:8%, 01h:16%, 02h:24%, 03h:32%	00～03	01	
097	1 Field Y Detection Slope, Color Still Picture Smooth 00h:1/2 ～ 03h:∞[02]	00～03	02	
098	1 Field Y Detection Offset, Color Still Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0C: Center]	00～0F	08	
099	2 Field Y Motion Detection Enhancement 00h:ON, 01h:OFF	00～01	00	
100	2 Field Color Motion Detection Enhancement 00h:ON, 01h:OFF	00～01	00	
101	1 Field Y Detection Slope, Y Motion Picture Edge 00h:ON, 01h:OFF	00～03	02	
102	1 Field Y Detection Offset, Y Motion Picture Edge 00h:1/2 ～ 03h:∞[02]	00～0F	0D	
103	2 Field Motion Detection Enhancement 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～01	00	
104	2 Field Motion Detection Enhancement Standard 00h:ON, 01h:OFF	00～01	00	
105	1 Field Y Detection Slope, Y Motion Picture Smooth 00h:ON 01h:OFF	00～03	02	
106	1 Field Y Detection Offset, Y Motion Picture Smooth 00h:1/2 ～ 03h:∞[02: Default]	00～0F	0E	
107	2 Field Color Detection 2nd Slope Threshold, Color Still Picture Edge 00h:0, 01h:1, 0h2:2, 03h:3	00～03	00	
108	1 Field Y Detection Slope, Y Still Picture Edge 00h:1/2 ～ 03h:∞[02]	00～03	02	
109	1 Field Y Detection Offset, Y Still Picture Edge 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	06	
110	2 Field C Detection 2nd Slope, Color Still Picture Edge 00h:1/8, 0h1:1/4, 02h:1/2, 03h:1	00～03	00	

10. I²C Adjustment Parameter List (continued)

TC90103 (7/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
111	1 Filed Detection Slope, Y Still Picture Smooth 00h:1/2 ～ 03h:∞[02]	00～03	02	
112	1 Field Y Detection Offset, Y Still Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	0A	
113	2 Field Detection 2nd Slope Threshold, Color Still Picture Smooth 00h:0, 01h:1, 02h:2, 03h:3	00～03	00	
114	2 Field Color Detection Slope, Color Motion Picture Smooth 00h:1/2 ～ 03h:∞[02]	00～03	02	
115	2 Field Color Detection Offset, Color Motion Picture Edge 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	06	
116	2 Field Color Detection 2nd Slope, Color Still Picture Smooth 00h:1/8, 01h:1/4, 02h:1/2, 03h:1	00～03	00	
117	2 Field Color Detection Slope, Color Motion Picture Edge 00h:1/2 ～ 03h:∞[02]	00～03	02	
118	2 Field Color Detection Offset, Color Still Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	0C	
119	2 Field 2nd Slope Threshold, Y Still Picture Edge 00h:0, 01h:1, 02h:2, 03h:3	00～03	01	
120	2 Field Color Detection Slope, Color Still Picture Edge 00h:1/2 ～ 03h:∞ [02h: Default]	00～03	01	
121	2 Field Color Detection Offset, Color Still Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	04	
122	2 Field Detection 2nd Slope Offset, Y Still Picture Edge 00h:1/8, 01h:1/4, 02h:1/2, 03h:1	00～03	01	
123	2 Field Color Slope Threshold, Color Still Picture Smooth 00h:1/2 ～ 03h:∞ [02h: Default]	00～03	02	
124	2 Field Color Detection Offset, Color Still Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	0B	
125	2 Field Detection 2nd Slope Threshold, Y Still Picture Smooth 00h:0, 01h:1, 02h:2, 03h:3	00～03	01	

10. I²C Adjustment Parameter List (continued)

TC90103 (8/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
126	2 Field Detection Slope, Y Motion Picture Edge 00h:1/2 ～ 03h:∞ [02h: Default]	00～03	01	
127	2 Field Detection Offset, Y Motion Picture Edge 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	0D	
128	2 Field Detection 2nd Slope, Y Still Picture Smooth 00h:1/8, 01h:1/4, 02h:1/2, 03h:1	00～03	01	
129	2 Field Detection Slope. Y Motion Picture Smooth 00h:1/2 ～ 03h:∞ [02h: Default]	00～03	02	
130	2 Field Detection Offset, Y Motion Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	0A	
131	2 Field Detection Slope, Y Still Picture Edge 00h:1/2 ～ 03h:∞ [02h: Default]	00～03	02	
132	2 Field Detection Offset, Y Still Picture Edge 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	07	
133	2 Field Detection Slope, Y Still Picture Smooth 00h:1/2 ～ 03h:∞ [02h: Default]	00～03	02	
134	2 Field Detection Offset, Y Still Picture Smooth 00h:Still Picture ～ 0Fh:Motion Picture [0Ch: Center]	00～0F	0A	
135	[NR] Color Level (for Y Differential Color Level Detection) 00h:Small ～ 0Fh:Large［03h: Center］	00～0F	03	
136	[NR/NR] Y Differential Integrate Motion Picture Distinction Level 00h:Motion Picture ～ 0Fh:Still Picture [01h: Default]	00～0F	01	
137	2 Field Assistance Simple Color Motion Detection Threshold 00h:Small ～ 0Fh:Large [0Fh: Default]	00～0F	0F	
138	2 Field Assistance Simple Color Motion Detection ON/OFF 00h:ON, 01h:OFF	00～01	00	
139	Color Signal Edge Detection Level 00h:Small ～ 07h: Large [04h: Default]	00～07	05	
140	2 Field Assistance Function 00h:OFF, 01h:ON	00～01	01	

10. I²C Adjustment Parameter List (continued)

TC90103 (9/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
141	2 Field Assistance Select 00h:Y, 01h:C	00～01	00	
142	2 Field Assistance Color Still Picture Distinction Level 00h: Small ～ 07h:Large [04h: Default]	00～07	04	
143	2 Field Assistance Y Still Picture Distinction Level 00h: Small ～ 07h: Large [04h: Default]	00～07	04	
144	1 Field Detection Still Offset Adjustment for Still Picture Cross Color Improvement 00h:OFF ～0Fh:Compulsion Still Picture 2 Step [0Ah: Default]	00～0F	0A	
145	2 Field Detection Still Picture Offset Adjustment for Still Picture Cross Color Improvement 00h:OFF～0Fh:Still Picture Distinction	00～0F	03	
146	Motion Detection Error, Compulsion Motion Picture at Vicinity of 3.4MHz Still Color Signal Level Threshold (Still Picture Color Detection) 00h:OFF～0Fh:15/1023 (1Lsb Step)[00h: Default]	00～0F	00	
147	Motion Detection Error, Compulsion Motion Picture at Vicinity of 3.4MHz Still Picture Color Signal Level Threshold (Still Picture No Color Detection) 00h:OFF～0Fh:15/1023 (1Lsb Step)[00h: Default]	00～0F	00	
148	[NR] Band Select 00h:Wideband, 01h: Narrowband	00～01	00	
149	Y Differential Color Level Detection 00h:Motion Detection OFF, 01h:Nonlinear Processing	00～01	00	
150	Y Non Correlation Detection Level Switch 00h:[4:0], 01h:「5:1」	00～01	00	
151	Color Non Correlation Detection Level Switch 00h:[5:1], 01h:「6:2」	00～01	00	
152	[NR] Y Differential Color Level Y Motion Picture Distinction Level 00h:Motion Picture ～ 0Fh:Still Picture [08h: Default]	00～0F	08	
153	AGC Manual Setting (AGC = Auto Gain Control) 00h:OFF, 01h:ON	00～01	00	
154	AGC Manual Gain Setting (AGC = Auto Gain Control)	00～7F	28	
155	AGC Sync Level Detection ON/OFF (AGC = Auto Gain Control) 00h:OFF, 01h:ON	00～01	01	

10. I²C Adjustment Parameter List (continued)

TC90103 (10/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
TC90103	ANT/NTSC/480i			
156	AGC Peak Level Detection ON/OFF (AGC = Auto Gain Control) 00h:OFF, 01h:ON	00～01	01	
157	AGC OFF/ON Level Setting (AGC = Auto Gain Control) 00h:OFF, 01h:70%, 02h:75%, 03h:80%	00～03	00	
158	GCA Setting (GCA = ?) 00h:Auto, 01h:Digital	00～01	00	
159	AGC Response Time Setting (AGC = Auto Gain Control) 00h:Fast ～ 07h:Slow	00～07	00	
160	Peak AGC Level (AGC = Auto Gain Control) 00h:105%, 01h:110%, 02h:115%, 03h:120%	00～03	01	
161	GCA Gain Switch (GCA = ?) 00h:-3～+7dB, 01h:+6dB, 02h:-5～+5dB, 03h:-6～+4dB	00～03	01	
162	Pedestal Difference Detection ON/OFF 00h:OFF, 01h:ON	00～01	00	
163	Peak AGC Discharge Speed 00h:Fast ～ 07h:Slow	00～07	00	
164	AGC Pedestal Timing for Digital Clamp (AGC = Auto Gain Control) 08h:-1.19us ～ 00h:(Center) ～ 07h:+1.04us	00～0F	08	
165	AGC Sync Timing for Digital Clamp 08h:-1.19us ～ 00h:(Center) ～ 07h:+1.04us	00～0F	08	
166	Horizontal Phase Adjustment for Digital Format 08h:-1.185us ～ 00h: 0us ～ 0Fh:+1.04us	00～0F	08	
167	Vertical Phase Adjustment for Digital Format 00h:0H ～ 0Fh:+15H	00～0F	00	
168	Vertical Horizontal Start Phase at Vertical Through 00h:0W, 01h:64W, 02h:128W, 03h:192W, 04h:256W, 05h:320W, 06h:348W, 07h:Prohibition	00～07	00	
169	VD at Non Standard Output 00h:Horizontal Count Standard, 01h:Vertical Separation Standard	00～01	01	
170	656 Non Conforming Horizontal Out Phase 00h:32W, 01h:36W, 02h:40W, 03h:44W	00～03	00	

10. I²C Adjustment Parameter List (continued)

TC90103 (11/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
TC90103	ANT/NTSC/480i			
171	CK Out Clock Select 00h:13.5MHz, 01h:27MHz(601:13.5MHz), 02h:54MHz(656:27MHz), 03h:AUTO	00～03	03	
172	Horizontal Blanking Period 00h:OFF, 01h:ON	00～01	00	
173	Vertical Blanking Period 00h:OFF, 0h1:ON	00～01	00	
174	601 Output Mode YCbCr Overlay Select 00h:OFF, 01h:ON	00～01	00	
175	Horizontal Blanking Period Overlay Line Select NTSC:21/284 Lines+(Register Value)、 PAL:24/337 Lines+(Register Value) D2 60Hz 41 Lines+(Register Value)、 D2 50Hz:47 Lines+(Register Value)[00h: Default]	00～1F	00	
176	Field Blanking Period Overlay Line Select NTSC:1 Line+(Register Value)、 PAL:1 Line+(Register Value)	00～0F	00	
177	for DID Code Setting	00～0F	04	
178	for SDID Code Setting	00～FF	04	
179	Picture Processing Period Horizontal Start Phase Adjustment 08h:-1.185us ～ 00h:0us ～ 07h:+1.04us	00～0F	08	
180	Picture Processing Period Horizontal Width Adjustment 08h:-1.185us ～ 00h:0us ～ 07h:+1.04us	00～0F	08	
181	Picture Processing Period Vertical Start Phase Adjustment 00h:10 Line ～ 0Fh:25 Lines	00～0F	00	
182	EN_PIXV_E 00h:Manual, 01h:Auto	00～01	00	
183	COMB_KILL 00h:OFF, 01h:1～21H, 02h:1～22H, 03h:1～23H, 04h:1～24H, 05h:1～25H, 06h:1～26H, 07h1:Auto (60Hz:22H、50Hz:23H)	00～07	07	
184	Horizontal Blanking Pulse Start Phase Adjustment 08h:-2.37us ～ 00h:0us ～ 07h:+2.07us	00～0F	08	
185	Horizontal Blanking Pulse Width Adjustment 08h:-2.37us ～ 00h:0us ～ 07h:+2.07us	00～0F	08	

10. I²C Adjustment Parameter List (continued)

TC90103 (12/12)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
TC90103	ANT/NTSC/480i			
186	Memory Write Horizontal Phase Adjustment 08h:-2.37us ～ 00h:0us ～ 07h:+2.07us	00～0F	08	
187	Memory Write Vertical Start Phase Adjustment 08h:-8H ～ 00h:0us ～ 07h:+7H	00～0F	08	
188	Burst Gate Pulse Start Phase Adjustment 00h:0us ～ 0Fh:+4.44us [02h: Default](3.58MHz unit)	00～0F	02	
189	Clamp Pulse Horizontal Adjustment for Ghost Canceller Tuner 08h:-1.185us ～ 00h:0us ～ 07h:+1.04us [0Dh: Default](6.75MHz unit)	00～0F	08	
190	Pedestal Detection Pulse Start Phase Adjustment for Horizontal Separation 08h:-2.37us～00h:±0～07h:+2.07us 3.375MHz unit	00～0F	08	
191	Pedestal Detection Pulse Start Width Adjustment for Horizontal Separation 08h:-2.37us～00h:±0～07h:+2.07us 3.375MHz unit	00～0F	08	
192	Charge Discharge Pulse Start Phase Adjustment for Input Clamp 08h:-2.37us～00h:±0～07h:+2.07us 3.375MHz unit	00～0F	08	
193	Charge Discharge Pulse Start Width Adjustment for Input Clamp 08h:-2.37us～00h:±0～07h:+2.07us 3.375MHz unit	00～0F	08	
194	Color Stripe Detection 00h:OFF, 01h:ON	00～01	00	
195	Noise Detection Period Vertical Start Adjustment NTSC:7H/270H Lines＋(Register Value)、 PAL:4H/316H Lines＋(Register Value)	00～07	00	
196	Read Data Read Order Switch	00～07	00	
197	EDTV Ⅱ Detection 00h:OFF(ED2 Impossible), 01h:ON(ID1 Impossible)	00～01	00	
198	Linear Area Width Setting for ANT(Analog)	00～07	05	

10. I²C Adjustment Parameter List (continued)

AD9880 (1/1)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
AD9880	A/D Converter, 480p/1080i/720p				
001	Pr channel gain Adjust		00～7F	40	
002	Y Channel Gain Adjust		00～7FF	40	
003	Pb Channel Gain Adjust		00～7F	40	
004	Pr offset MSB		00～FF	40	
005	Pr Offset		00～FF	00	
006	Y Offset MSB		00～FF	04	
007	Y Offset		00～FF	00	
008	Pb Offset MSB		00～FF	40	
009	Pb Offset		00～FF	00	
010	Clamp Placement	480p	00～FF	06	
011		1080i	00～FF	45	
012		720p	00～FF	45	
013	Clamp Duration	480p	00～FF	1D	
014		1080i	00～FF	2A	
015		720p	00～FF	74	

10. I²C Adjustment Parameter List (continued)

CXA2211 (1/2)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
CXA2211	Sync Processor				
001	Horizontal Number High Bit		00～3FF	*	
002	Vertical Number High Bit		00～7FF	*	
003	AFC loop gain control 00h = H free-running mode	480i	00～03	02	
004	01h = gain low 02h = gain middle	480p	00～03	02	
005	03h = gain high	1080i	00～03	02	
006		720p	00～03	02	
007	Phase control (Control for rough-tune) for HOUT 00h = H sync center, 01h = center -3.125%, 02h = center -6.25%, 03h = center -9.375% 04h～06h = Leading edge same phase as HSSOUT 07h = Outputs the same phase as HSSOUT	480i	00～07	07	
008		480p	00～07	07	
009		1080i	00～07	07	
010		720p	00～07	07	
011	Phase control (Control for fine-tune) for HOUT This is valid when HSHIFT = 0～3. 1 step: 0.024%, Total control range: 6%	480i	00～FF	10	
012		480p	00～FF	10	
013		1080i	00～FF	10	
014		720p	00～FF	10	
015	Sets the sync separation method. This is valid when AUTO = 1 00h = Forcibly sliced at the sync tip + 78mV level. 01h = Level detection mode	480i	00～01	01	
016		480p	00～01	01	
017		1080i	00～01	01	
018		720p	00～01	01	

10. I²C Adjustment Parameter List (continued)

CXA2211 (2/2)

Adjustment Mode OSD	Adjustment Item		Adjustment Range(HEX)	Initial Data(HEX) DW1-U	
CXA2211	Sync Processor				
019	This is switch a switch that selects the route of LPF in the sync sep circuit. This is valid when AUTO = 1 00h = Through, 01h = LPF	480i	00～01	00	
020		480p	00～01	00	
021		1080i	00～01	00	
022		720p	00～01	00	
023	Sync separation circuit slice level setting This is valid when HSEPSEL = 1 00h = Automatic setting 01h = H fixed to 65% from the sync tip. 02h = H fixed to 25% from the sync tip. 03h = ***	480i	00～03	01	
024		480p	00～03	01	
025		1080i	00～03	01	
026		720p	00～03	01	

10. I²C Adjustment Parameter List (continued)

HDMI (1/2)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
HDMI	HDMI_1/2			
001	VSYNC/Clock detect/Sync detect 1	00～07	*	
002	HDCP Status	00～FF	*	
003	Pixel clock	00～FF	*	
004	N hardware value 1 Low 7 bit	00～FF	*	
005	N hardware value 1 Middle 7 bit	00～FF	*	
006	N hardware value 1 High 4 bit	00～FF	*	
007	CTS hardware value 1 Low 7 bit	00～FF	*	
008	CTS hardware value 1 Middle 7 bit	00～FF	*	
009	CTS hardware value 1 High 4 bit	00～FF	*	
010	ACR PLL hardware value 1	00～FF	*	
011	ACR PLL hardware value 1	00～3F	*	
012	Extracted Sampling Frequency 1 channel status bits 24-27(same value at 0x30)	00～7F	*	
013	Clock Accuracy/Sampling Frequency 1	00～FF	*	
014	Audio length/Audio length max 1	00～FF	*	
015	AV mute/HDMI mode 1	00～FF	*	
016	AVI info frame type code 1	00～FF	*	
017	AVI info frame version code 1	00～FF	*	
018	AVI info frame data 1	00～FF	*	
019		00～FF	*	
020		00～FF	*	
021		00～FF	*	
022		00～FF	*	

10. I²C Adjustment Parameter List (continued)

HDMI (2/2)

Adjustment Mode OSD	Adjustment Item	Adjustment Range(HEX)	Initial Data(HEX)	
			DW1-U	
HDMI	HDMI_1/2			
023	SPD info frame type code	00～FF	*	
024	SPD info frame version code	00～FF	*	
025	SPD info frame data	00～FF	*	
026	AUDIO Info Frame Type Code 1	00～FF	*	
027	AUDIO Info Frame Version Code 1	00～FF	*	
028	AUDIO Info Frame Data Bytes 1	00～FF	*	
029		00～FF	*	
030		00～FF	*	
031		00～FF	*	
032		00～FF	*	
033	GCP data	00～FF	*	
034	ACP packet type code	00～FF	*	
035	ACP type	00～FF	*	
036	DVD-audio type dependent generation	00～FF	*	
037	Audio copy information	00～FF	*	
038	RGB to YCbCr range scaling	00～01	01	
039	Back Porch Mode, Field 2 Position Adjustment	00～01	01	
040	Matching Test to allow increment of stability counter.	00～01	00	
041	RGB to YCbCr range scaling	00～01	01	
042	Back Porch Mode, Field 2 Position Adjustment	00～01	01	
043	Matching Test to allow increment of stability counter.	00～01	00	

11. TROUBLESHOOTING FLOW CHARTS

11.1 TROUBLE SHOOTING for DIGITAL MODULE (Device error check)

Digital Main P.W.B has five LED (KNIGHT RIDER) on board.
After Power ON by POWER_1(6pin of PPT3), these LED will be turned on in sequence as follows. It may take a few seconds for the sequence.

LED sequence

Sequence	D302 (Red) <PiO04>	D303 (Green) <PiO03>	D304 (Yellow) <PiO02>	D305 (Orange) <PiO01>	D306 (Red) <PiO00>
1 (Start)	○	○	○	○	●
2	○	○	○	●	●
3	○	○	●	●	●
4	○	●	●	●	●
5 (End)	○	○	○	○	○

○ is turn off the LED, ● is Lighting the LED

After Program is loaded without error, all LED will be turned off.
Any LED should not light.
If some errors occur, LED will show the error pattern.

(1) Check that LED is not lit.
(2) If LED is lit, refer to the following table and check the involved devices.

Location of LEDs

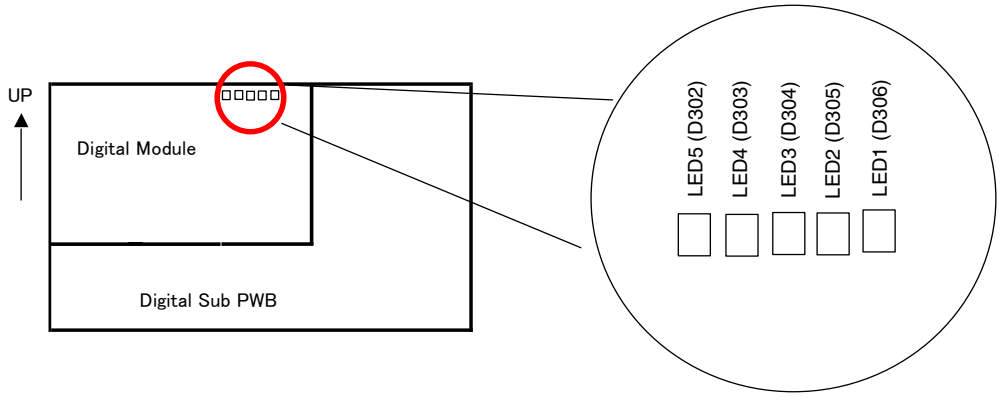


TABLE OF CONTENTS

TROUBLESHOOTING FLOWCHARTS

LED patterns for involved devices

No.	LED					Device	Circuit No	
	D306 (Red)	D305 (Orange)	D304 (Green)	D303 (Yellow)	D302 (Red)			
1	○	○	○	○	●	-	-	
2	○	○	○	●	○	Digital Tuner		Video/Audio of Cable/Air
3	○	○	○	●	●	Analog Tuner		Video/Audio of Cable/Air
4	○	○	●	○	○	MPEG		Video/Audio of Cable/Air
5	○	○	●	○	●	Graphics		All OSD
6	○	○	●	●	○	Flash Memory		Loading Program
7	○	○	●	●	●	IEEE1394 (Vivid Logic)		IEEE1394
8	○	●	○	○	○	-		
9	○	●	○	○	●	-		
10	○	●	○	●	○	-		
11	○	●	○	●	●	-		
12	○	●	●	○	○	Video Decoder (TC9010)		CCD etc.
13	○	●	●	○	●	-		
14	○	●	●	●	○	Audio DSP (AD9980)		Audio cont. SRS/BBE
15	○	●	●	●	●	-		
16	●	○	○	○	○	HDMI		HDMI
17	●	○	○	○	●	A/D Converter (AD9980)		Video
18	●	○	○	●	○	Sync Separator (CXA2211)		Sync
19	●	○	○	●	●	FC4		Picture Cont.
20	●	○	●	○	○	FC6		Picture Cont.

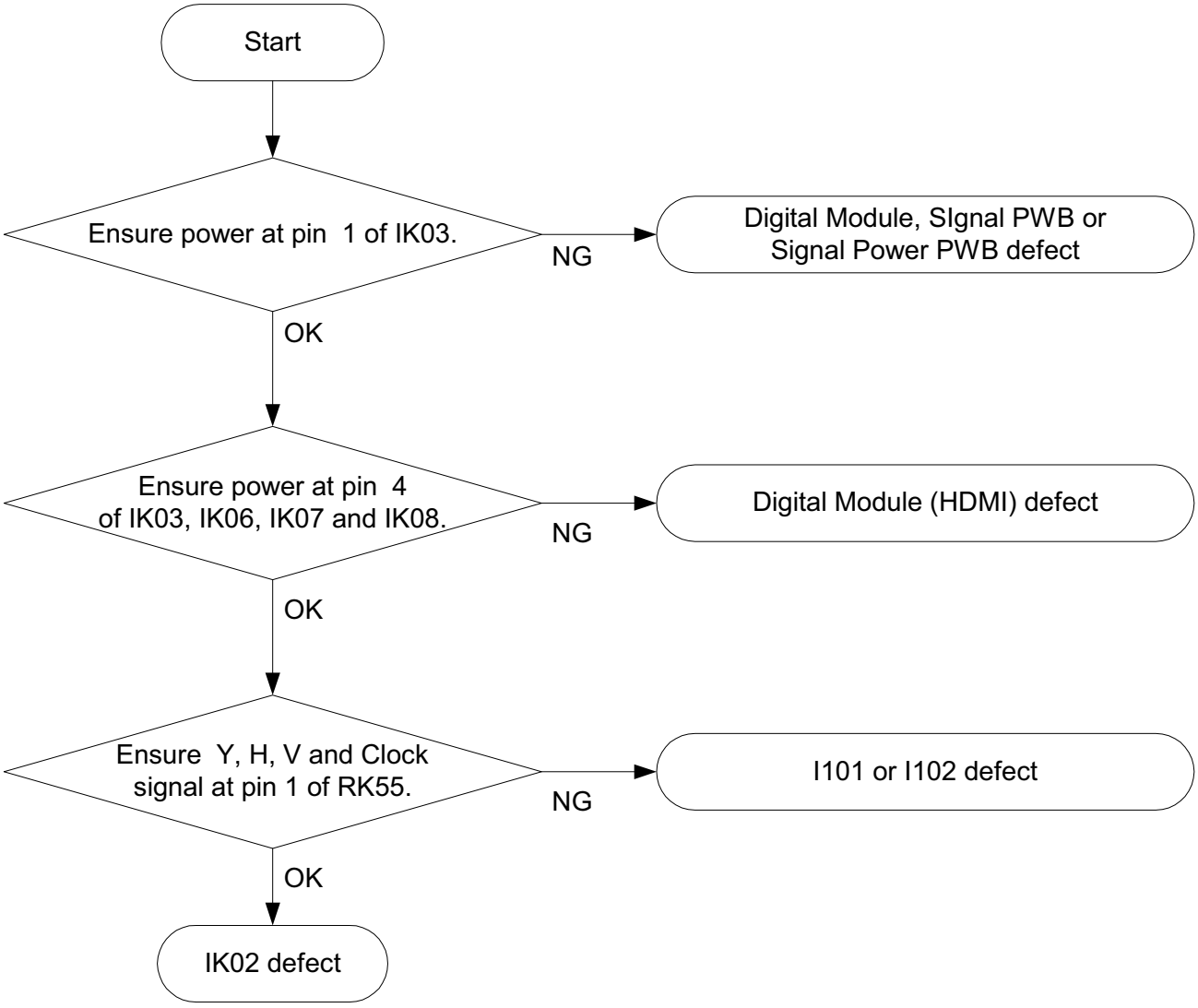
TROUBLESHOOTING FLOWCHARTS

No.	LED					Device	Circuit No	Role
	D306 (Red)	D305 (Orange)	D304 (Green)	D303 (Yellow)	D302 (Red)			
21	●	○	●	●	○	-		
22	●	○	●	●	●	Drive u-COM		LCD panel
23	●	●	○	○	○	Video SW		Video
24	●	●	○	○	●	Audio SW		Audio
25	●	●	○	●	○	Temp. Sensor		Temperature sensor
26	●	●	○	●	●	-	-	
27	●	●	●	○	○	-	-	
28	●	●	●	○	●	-	-	
29	●	●	●	●	○	-	-	
30	●	●	●	●	●	-	-	
31	●	○	○	○	●	-	-	

TROUBLESHOOTING FLOWCHARTS

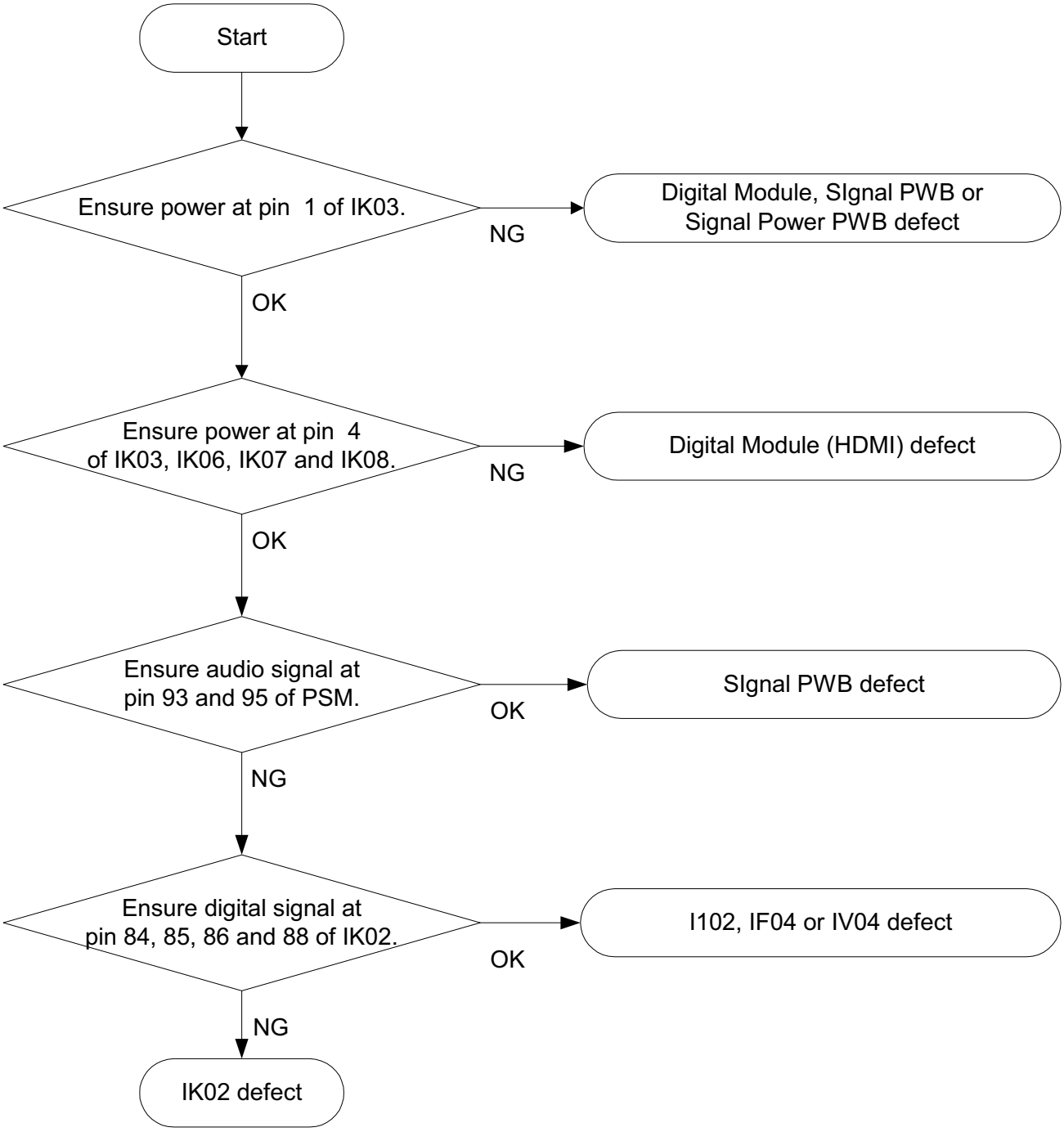
11.2 TROUBLE SHOOTING for HDMI

(1) No HDMI picture


Start
Ensure power at pin 1 of IK03.
NG
Digital Module, SIgnal PWB or Signal Power PWB defect
OK
Ensure power at pin 4 of IK03, IK06, IK07 and IK08.
NG
Digital Module (HDMI) defect
OK
Ensure Y, H, V and Clock signal at pin 1 of RK55.
NG
I101 or I102 defect
OK
IK02 defect

TROUBLESHOOTING FLOWCHARTS

(2) No HDMI analog and/or digital audio


Start
Ensure power at pin 1 of IK03.
NG
Digital Module, SIgnal PWB or Signal Power PWB defect
OK
Ensure power at pin 4 of IK03, IK06, IK07 and IK08.
NG
Digital Module (HDMI) defect
OK
Ensure audio signal at pin 93 and 95 of PSM.
OK
SIgnal PWB defect
NG
Ensure digital signal at pin 84, 85, 86 and 88 of IK02.
OK
I102, IF04 or IV04 defect
NG
IK02 defect

CIRCUIT BLOCK DIAGRAM

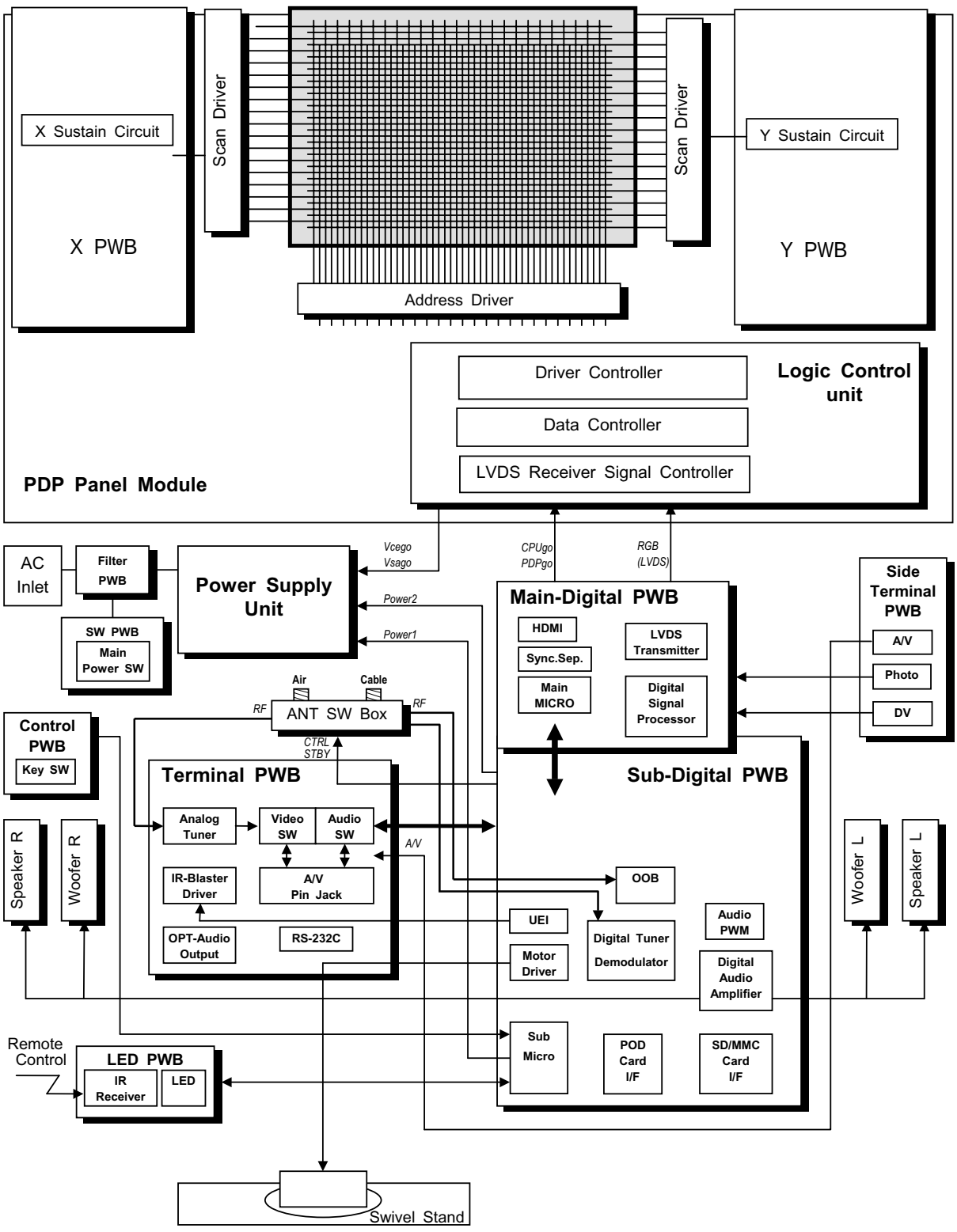
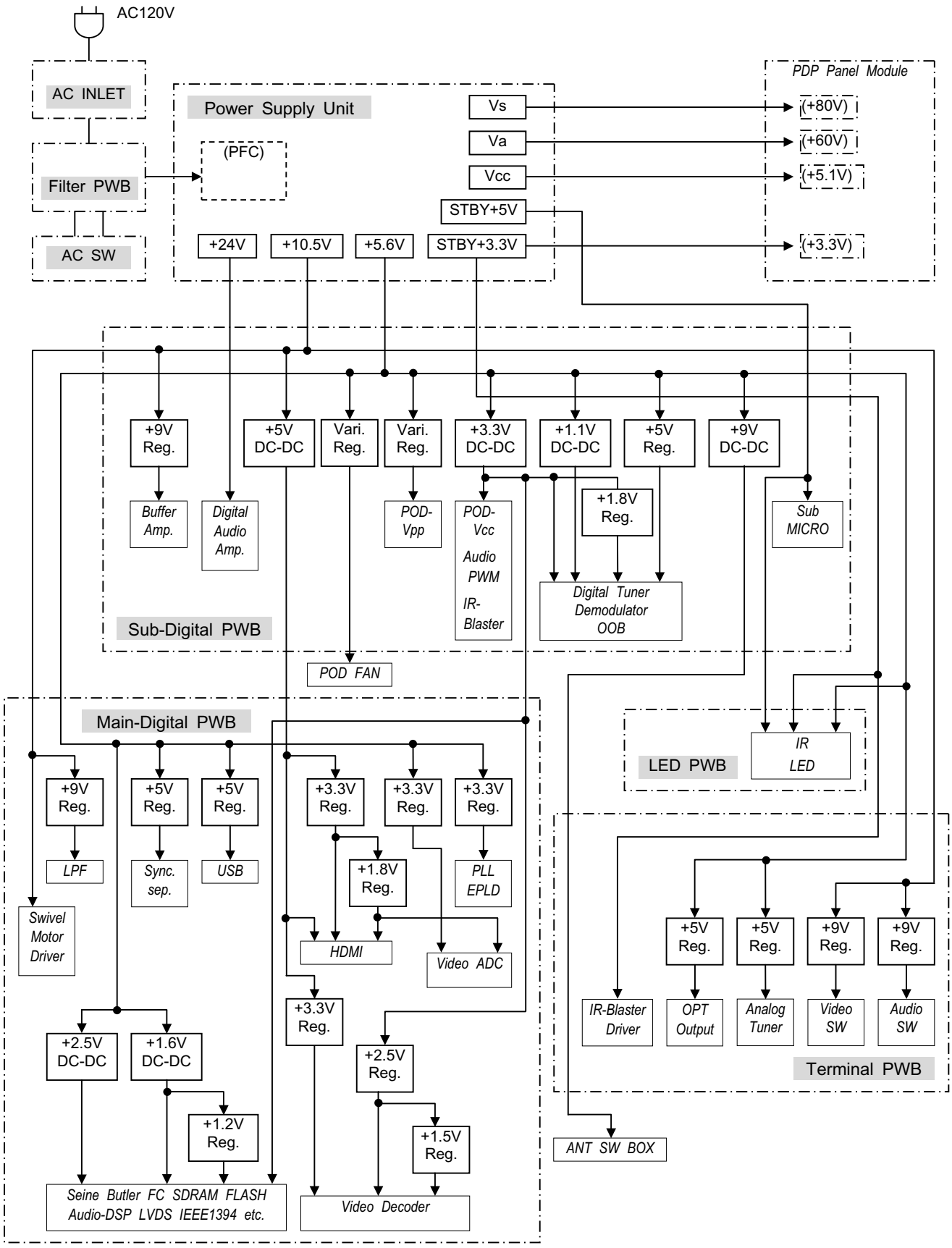
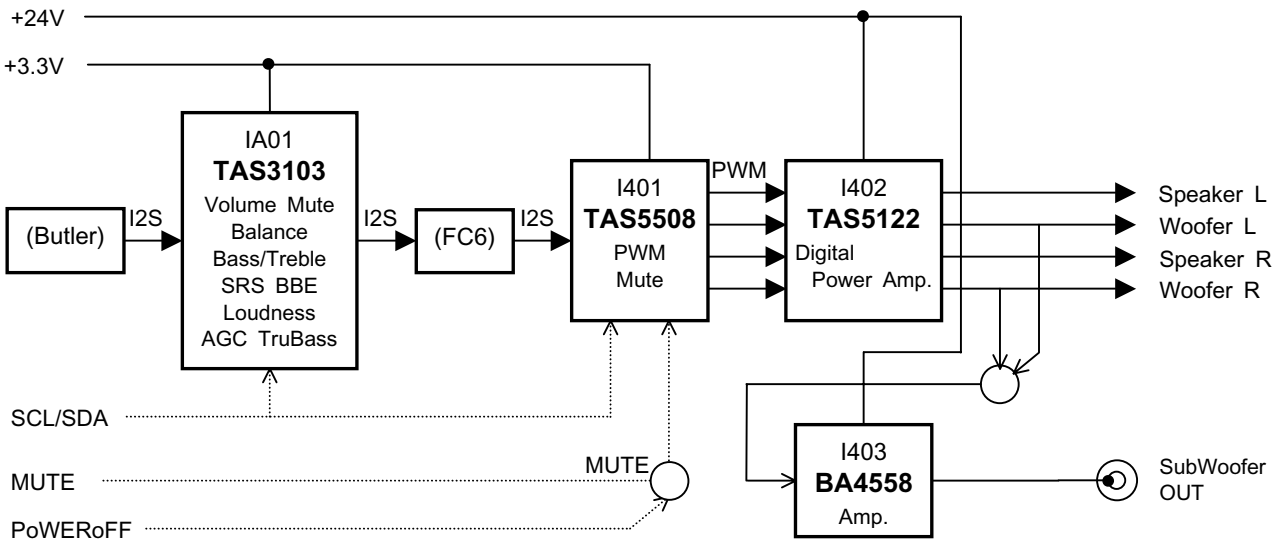


TABLE OF CONTENTS

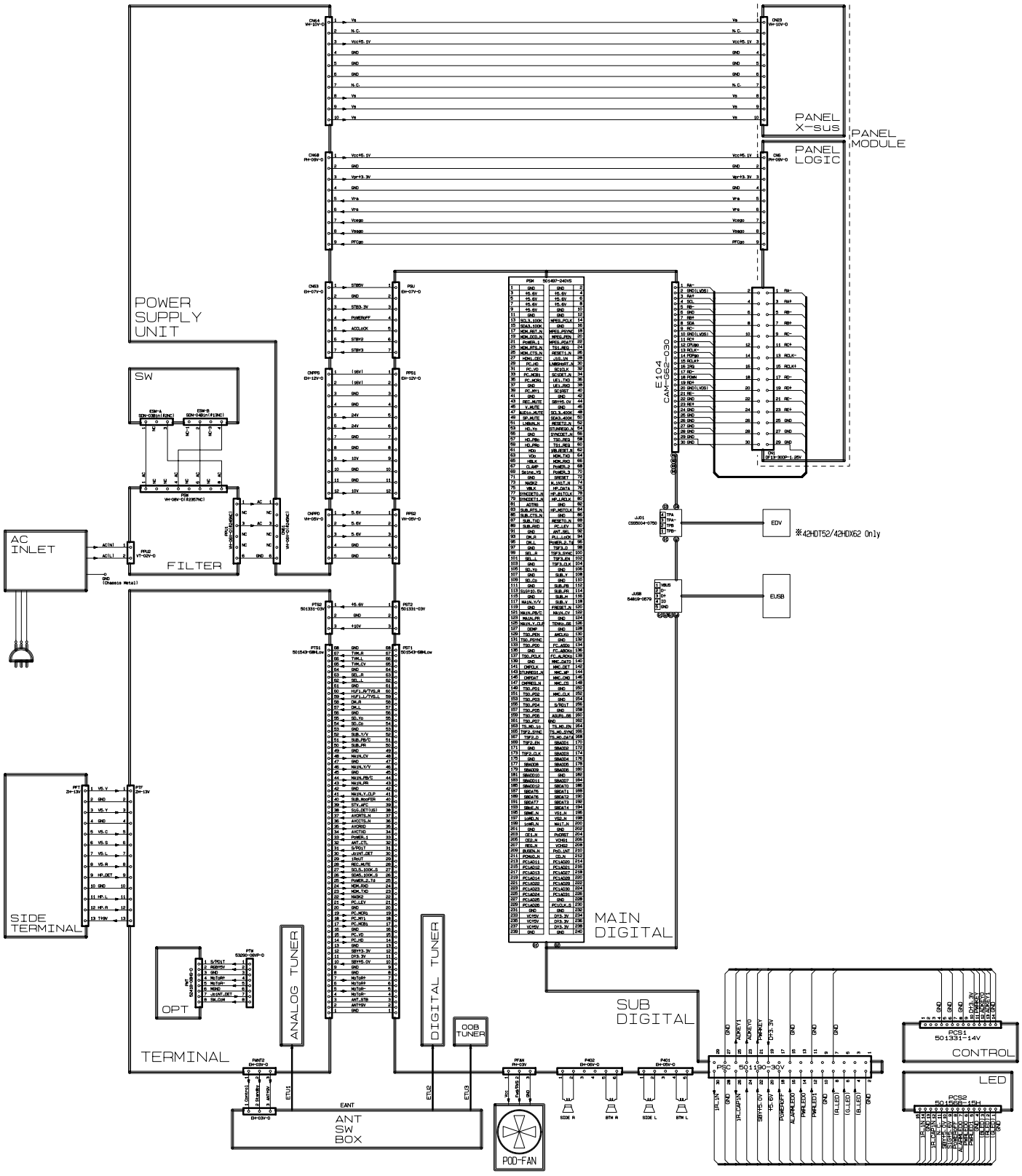
POWER SYSTEM BLOCK DIAGRAM



AUDIO CIRCUIT BLOCK DIAGRAM



CONNECTION DIAGRAM
(42" Models Only)

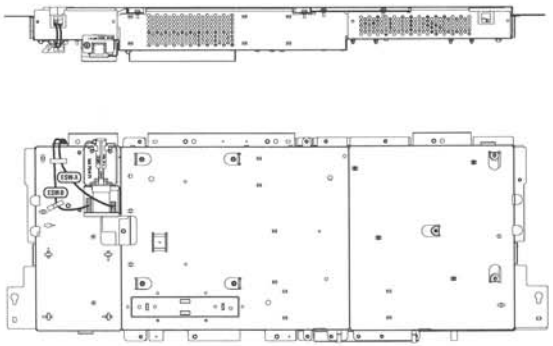


CH 3

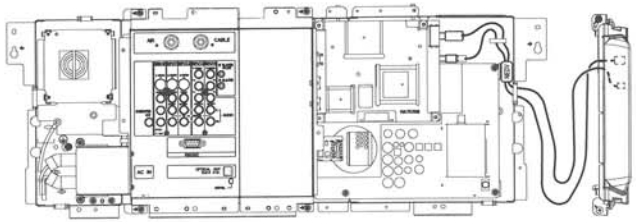
TABLE OF CONTENTS

FINAL WIRING DIAGRAM

1. In this step it's shown the wire dressing and connector's connection of the Power SW PWB.



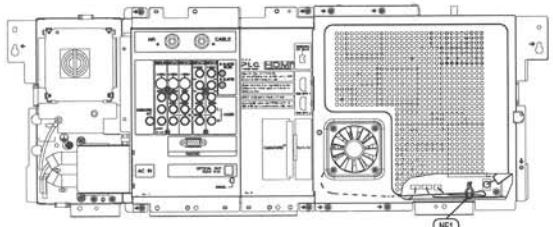
3. This shows the wire dressing and connector's connection of the Main PWB (EDV and EUSB).



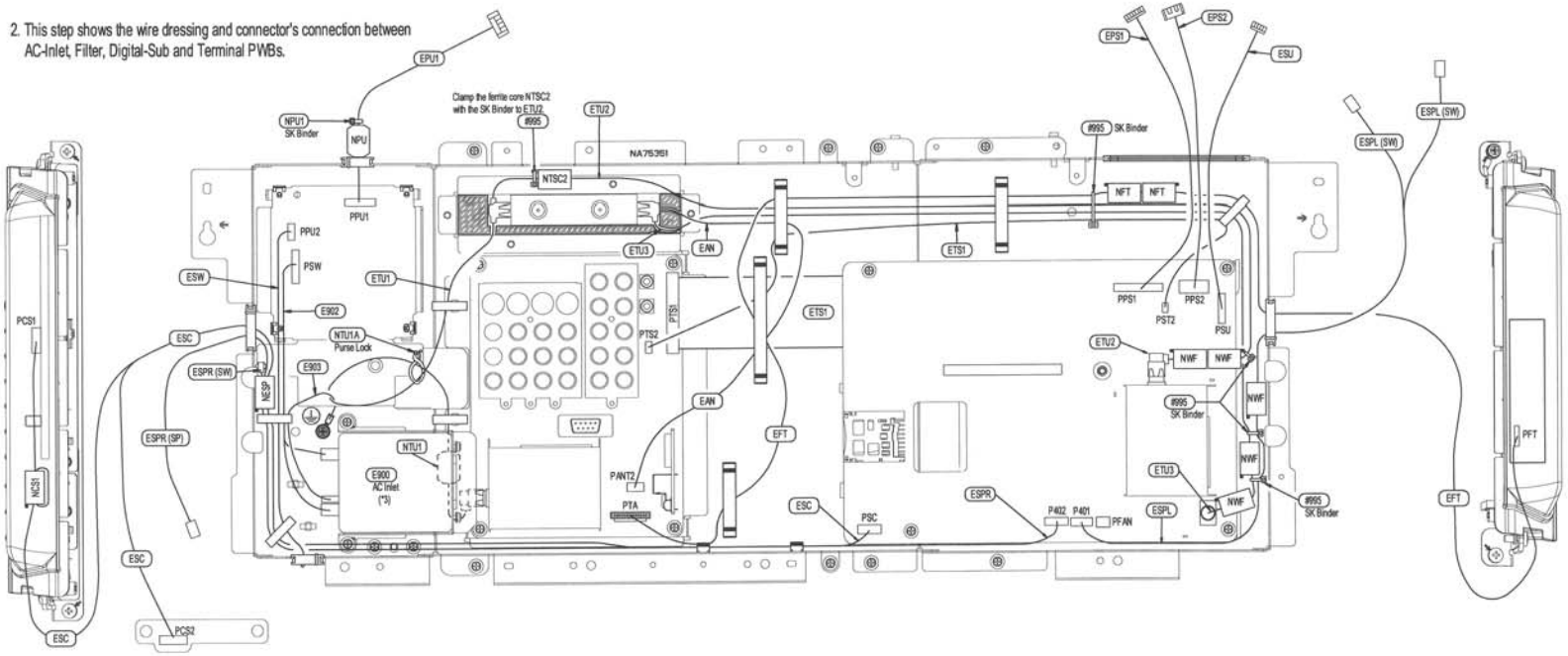
Difference table according to the models.

ITEM #	42HDX82/A	42HDT52/A	42HDS52/A
EDV	○	○	—
EUSB	○	○	○
NEDV	○	○	○

4. This shows the wire dressing and connector's connection of the fan.



2. This step shows the wire dressing and connector's connection between AC-Inlet, Filter, Digital-Sub and Terminal PWBs.



SPECIFICATIONS

1. This drawing shows the wire dressing and connector's connection of DW1-U Final Ass'y.
2. Connector with wire should be inserted into Plug Pins as it's shown on bellow table.
3. Connector housing should be inserted deeply, in Plug Pin Post with lock function, until lock it.
4. Refer to bellow table for connector's connection.

Connector Wire		Plug Pin 1		Plug Pin 2	
Name	Assy List	Board or Location	Name	Board or Location	Name
EDV	Chassis Assy	Main_DIGITAL	J101	Side Input Metal	-
EUSB	Chassis Assy	Main_DIGITAL	JUSB	Side Input Metal	-
ESHWL	Final Assy	TERMINAL	PSW	Sweeret Stand	-
EDS	Chassis Assy	Main_DIGITAL	E104	LOGIC (Panel)	-
ETS1	Chassis Assy	Sub_DIGITAL	PST1	TERMINAL	PTS1
ETU1	Chassis Assy	TERMINAL	UT J1	ANT SW BOX	-
ETU2	Chassis Assy	Sub_DIGITAL	UT01	ANT SW BOX	-
ETU3	Chassis Assy	Sub_DIGITAL	J101	ANT SW BOX	-
ECN23	Final Assy	POWER	CN64	PANEL X-SUS	CN23
ECN6	Final Assy	POWER	CN68	PANEL LOGIC	CN11
ESU	Chassis Assy	POWER	CN63	Sub_DIGITAL	PSU
EPS1	Chassis Assy	POWER	CNPP3	Sub_DIGITAL	PPS1
EPS2	Chassis Assy	POWER	CNPP2	Sub_DIGITAL	PPS2
EPU1	Chassis Assy	POWER	CN01	FILTER	PPU1
EAN	Chassis Assy	TERMINAL	PANT2	ANT SW BOX	-
ESPL	Chassis Assy	Sub_DIGITAL	P401	SP_L(J) WF_L(J)	-
ESPR	Chassis Assy	Sub_DIGITAL	P402	SP_R(J) WF_R(J)	-
E902	Chassis Assy	AC_INLET	AC_INLET	FILTER	PPU2
E903	Chassis Assy	AC_INLET	AC_INLET	Chassis GND	Chassis GND
ESW	Chassis Assy	FILTER	PSW	SW	ESW/A, ESW/B
EFT	Chassis Assy	TERMINAL	PTF	FRONT_TERMINAL	PFT
ESC	Chassis Assy	Sub_DIGITAL	PSC	LED (1/2)	PCS2
				CONTROL (1/2)	PCS1
ETS2	Chassis Assy	Sub_DIGITAL	PST2	TERMINAL	PTS2

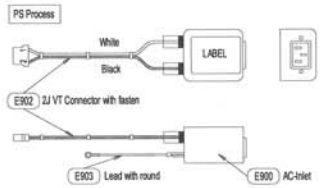
5. When closing the ferrite core, the claw of core should be locked and clicked surely.

NOTE *1: Wires should be fixed inside lead clamp and locked if available.

NOTE *2: Wires should be inserted into Lead Holder surely and lock if available.

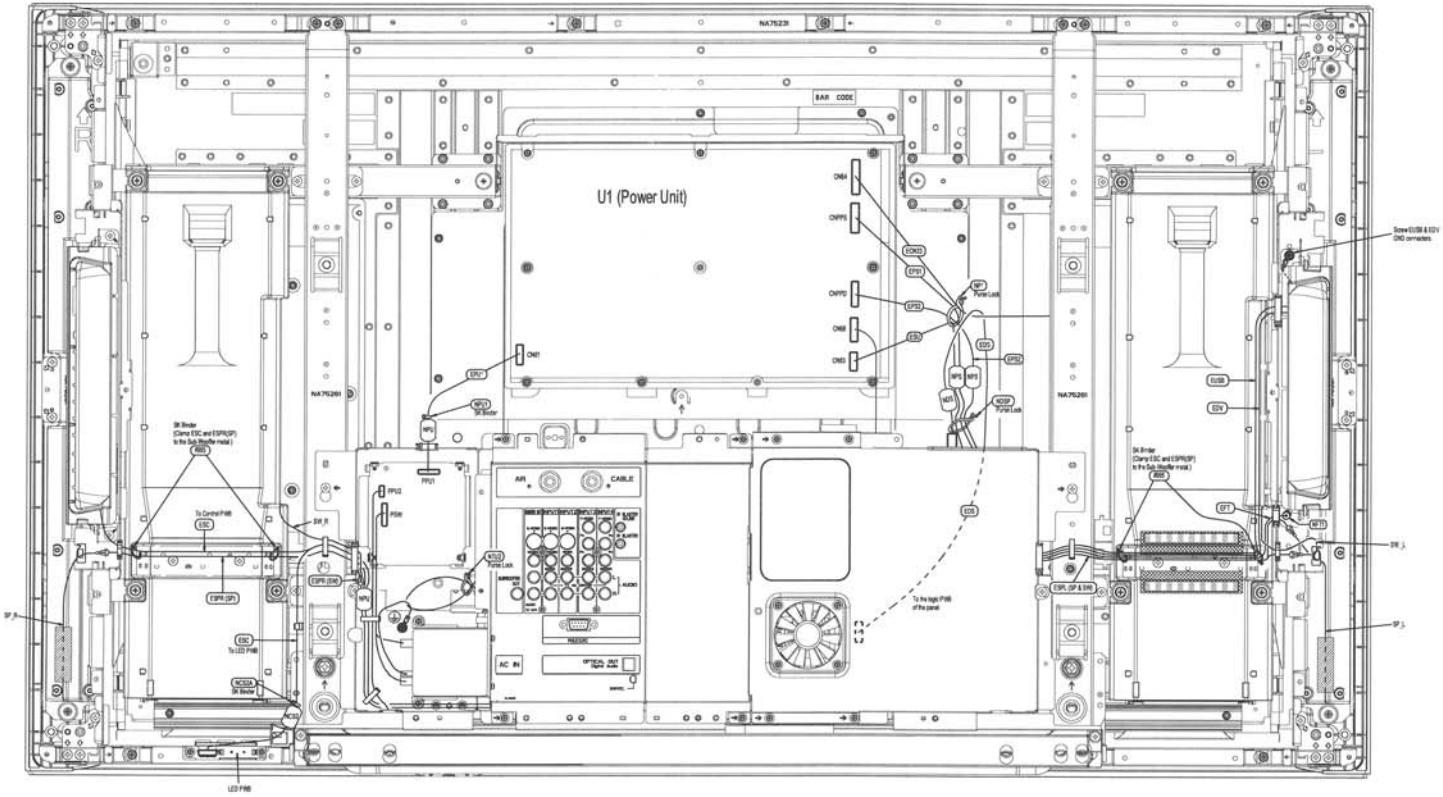
NOTE *3:

Part Specification
Connection of AC-inlet (E900)should be as follows:



Fasten terminals should be to the root of the AC-Inlet.
To the fasten terminals, press and hold the lock button and then pull the terminal.

FINAL WIRING DIAGRAM



SPECIFICATIONS

1. This drawing shows the wire dressing and connectors connection of DW1-U Final Ass'y.
2. Connector with wire should be inserted into Plug Pins as it's shown on bellow table.
3. Connector housing should be inserted deeply, in Plug Pin Post with lock function, until lock it.
4. Refer to bellow table for connector's connection.

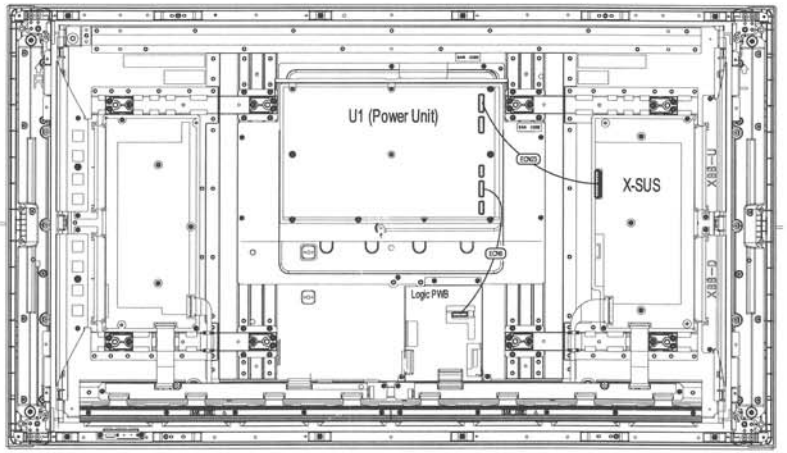
Connector Wire		Plug Pin 1		Plug Pin 2	
Name	Assy List	Board or Location	Name	Board or Location	Name
EDV	Chassis Assy	Main_DIGITAL	J101	Side Input Metal	-
EUSB	Chassis Assy	Main_DIGITAL	JUSB	Side Input Metal	-
ESWA, ESWB	Final Assy	TERMINAL	PSW	Swivevel Stand	-
EDS	Chassis Assy	Main_DIGITAL	E104	LOGIC (Panel)	-
ETS1	Chassis Assy	Sub_DIGITAL	PST1	TERMINAL	PTS1
ETU1	Chassis Assy	TERMINAL	UT.I1	ANT SW BOX	-
ETU2	Chassis Assy	Sub_DIGITAL	UT01	ANT SW BOX	-
ETU3	Chassis Assy	Sub_DIGITAL	JT01	ANT SW BOX	-
ECN23	Final Assy	POWER	CN64	PANEL X-SUS	CN23
ECN6	Final Assy	POWER	CN68	PANEL LOGIC	CN11
ESU	Chassis Assy	POWER	CN63	Sub_DIGITAL	PSU
EPS1	Chassis Assy	POWER	CNPPS	Sub_DIGITAL	PPS1
EPS2	Chassis Assy	POWER	CNPPD	Sub_DIGITAL	PPS2
EPU1	Chassis Assy	POWER	CN61	FILTER	PPU1
EAN	Chassis Assy	TERMINAL	PANT2	ANT SW BOX	-
ESPL	Chassis Assy	Sub_DIGITAL	P401	SP_L(2J) WF_L(3J)	-
ESPR	Chassis Assy	Sub_DIGITAL	P402	SP_R(2J) WF_R(3J)	-
E902	Chassis Assy	AC_INLET	AC_INLET	FILTER	PPU2
E903	Chassis Assy	AC_INLET	AC_INLET	Chassis GND	Chassis GND
ESW	Chassis Assy	FILTER	PSW	SW	ESWA, ESWB
EFT	Chassis Assy	TERMINAL	PTF	FRONT_TERMINAL	PFT
ESC	Chassis Assy	Sub_DIGITAL	PSC	LED (15J) CONTROL (14J)	PCS2 PCS1
ETS2	Chassis Assy	Sub_DIGITAL	PST2	TERMINAL	PTS2

5. When closing the ferrite core, the clew of core should be locked and clicked surely.

NOTE *1: Wires should be fixed inside lead clamp and locked if available.

NOTE *2: Wires should be inserted into Lead Holder surely and lock if available.

Preparation of Final Ass'y before chassis is instaled.



Difference table according to the models.

ITEM #	42HDX62/A	42HDT52/A	42HDS52/A
EDV	O	O	—

TABLE OF CONTENTS

QUICK DISASSEMBLE GUIDE(Back Cover 1)

① Remove Screw M3M 6*12 P#MJ03889 (2 Pcs.)
Cable Clamp M6 P#ML02111 (2 Pcs.)
② Remove Screw M3M 6*25 P#MJ03973 (2 Pcs.)

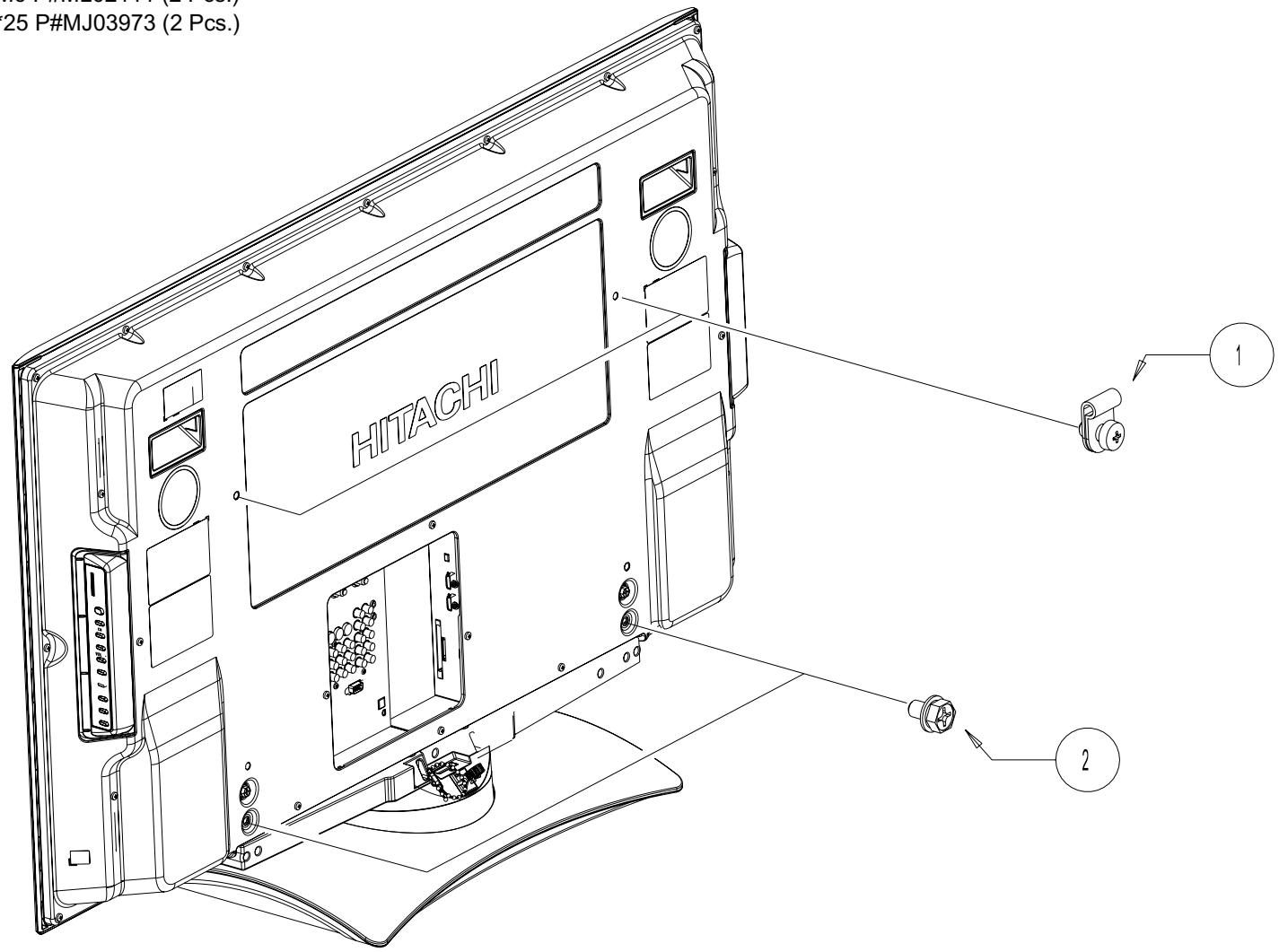
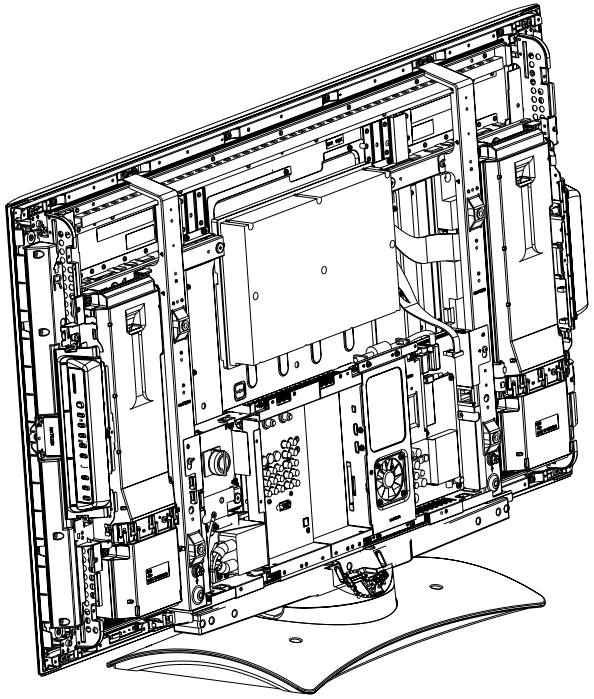
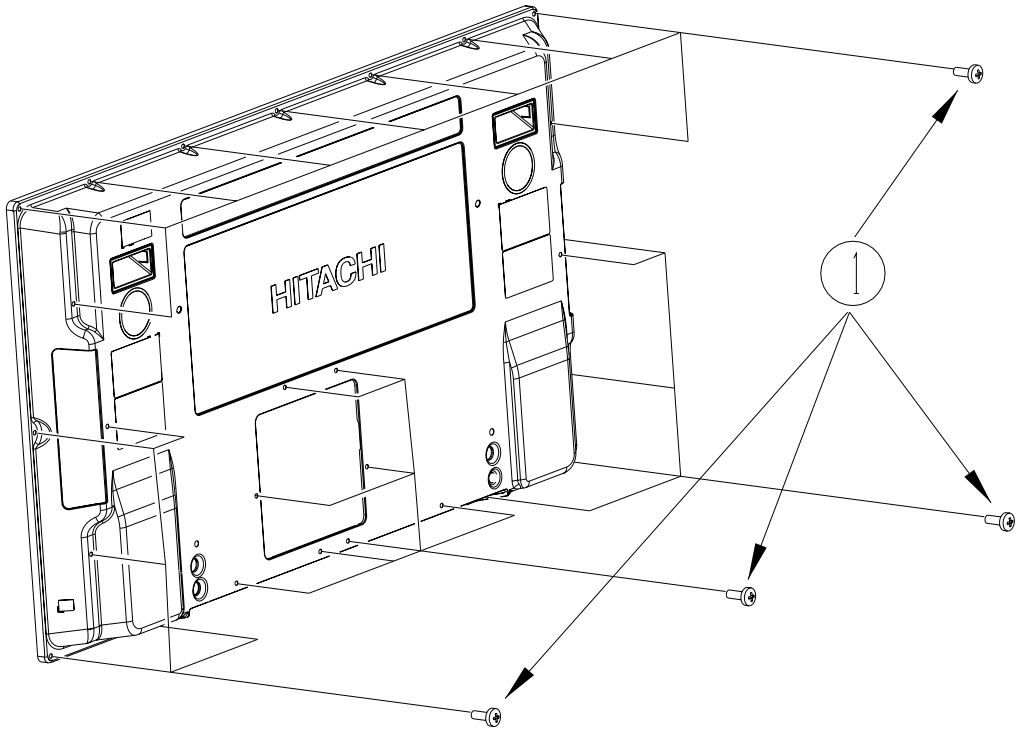


TABLE OF CONTENTS

QUICK DISASSEMBLE GUIDE(Back Cover 2)

① Remove Screw M3D 4*10 P#MJ03895 (27 Pcs.)

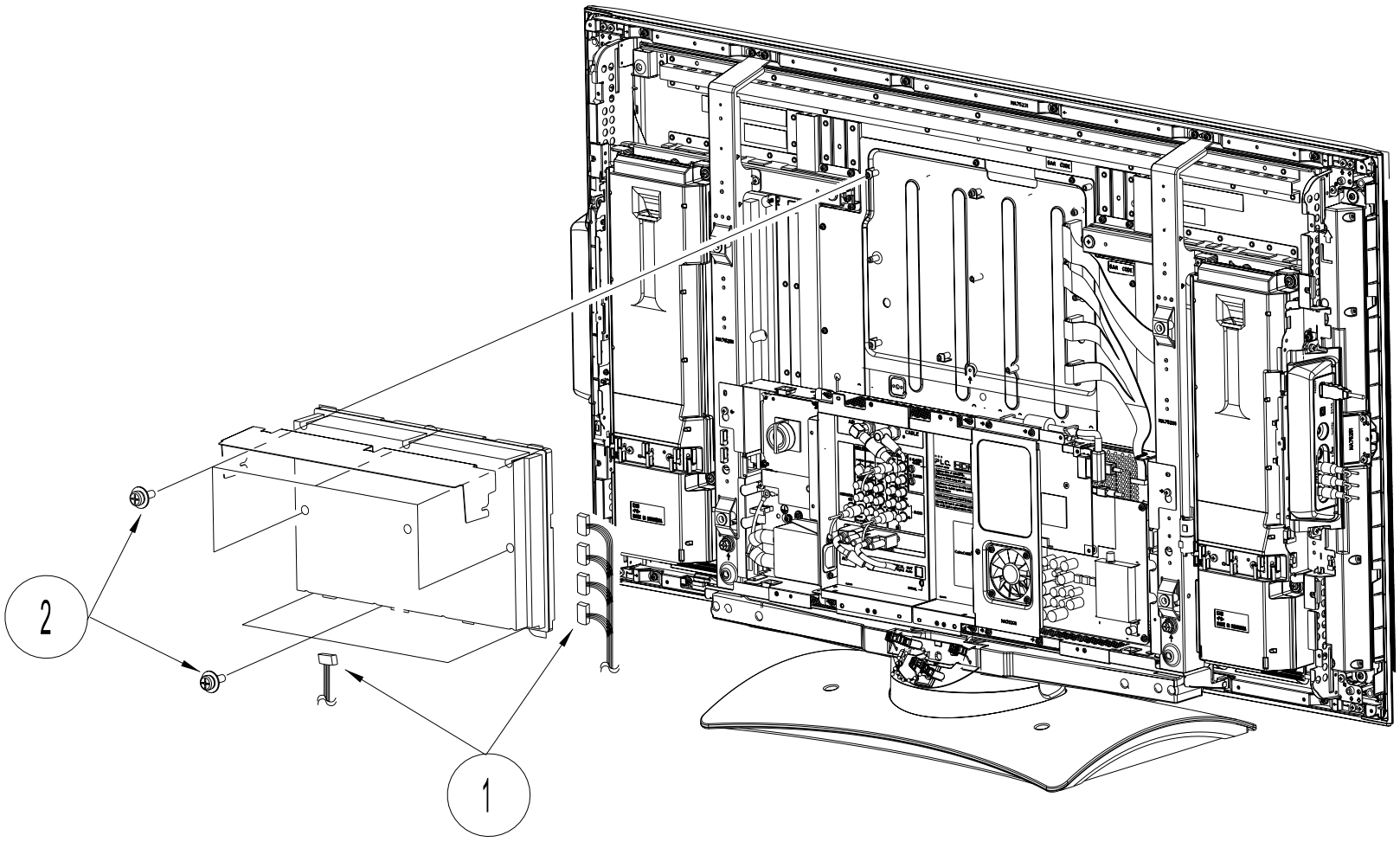




QUICK DISASSEMBLE GUIDE(Power Unit)

① Unplug Connectors

② Remove Screws M3E 3*8 P#MJ03963 (8 Pcs.)

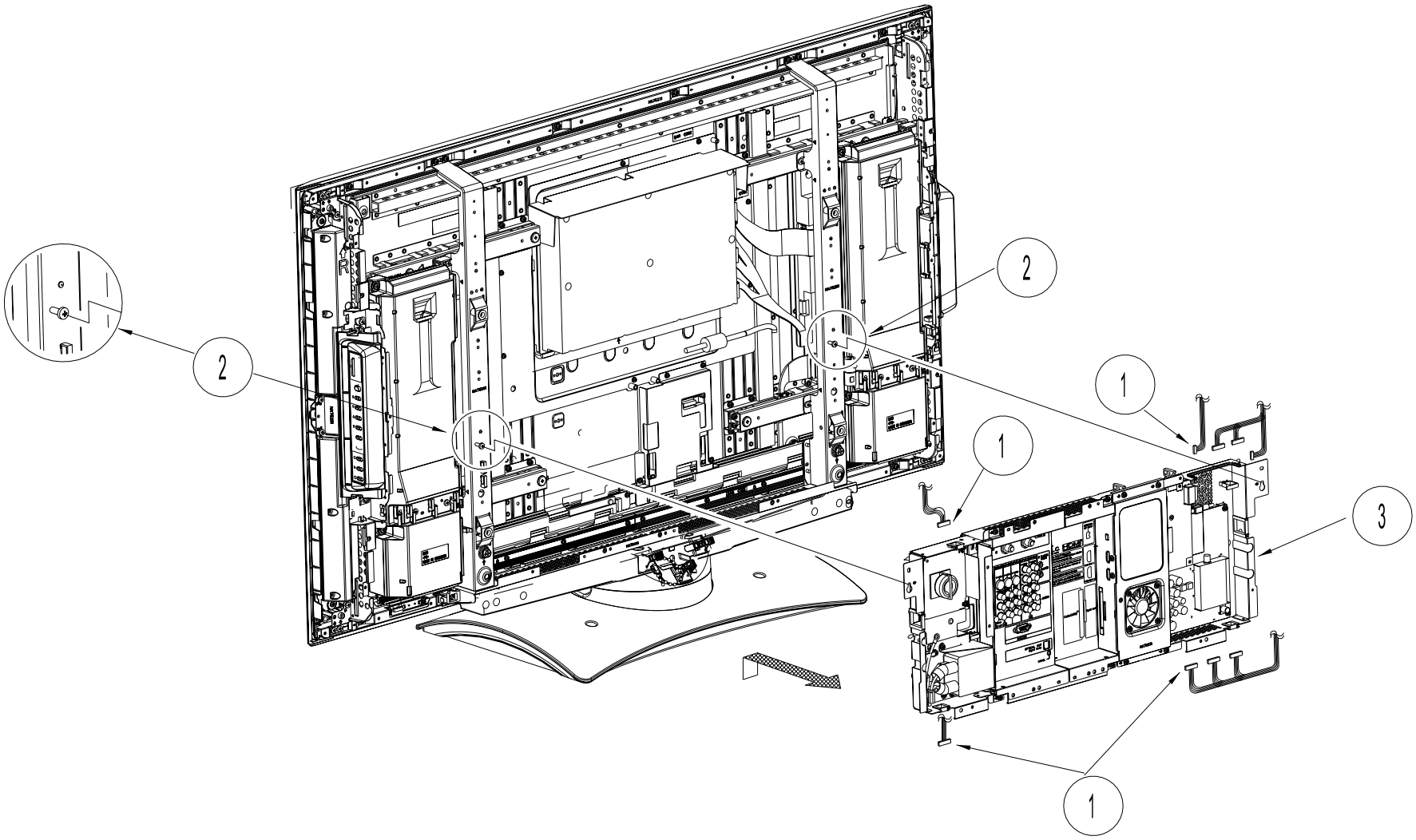


QUICK DISASSEMBLE GUIDE(AV Digital Block)

① Unplug Connectors

② Loose Screws M3D 4*10 P#MJ03895 (2 Pcs.)

③ Lift and Pull Back AV Digital Block



QUICK DISASSEMBLE GUIDE(AV Digital Boards 1)

① Unplug Connector

② Remove Screws M3E 3*8 P#MJ03963 (5 Pcs.)

③ Remove Screws M3E 3*8 P#MJ03963 (2 Pcs.)

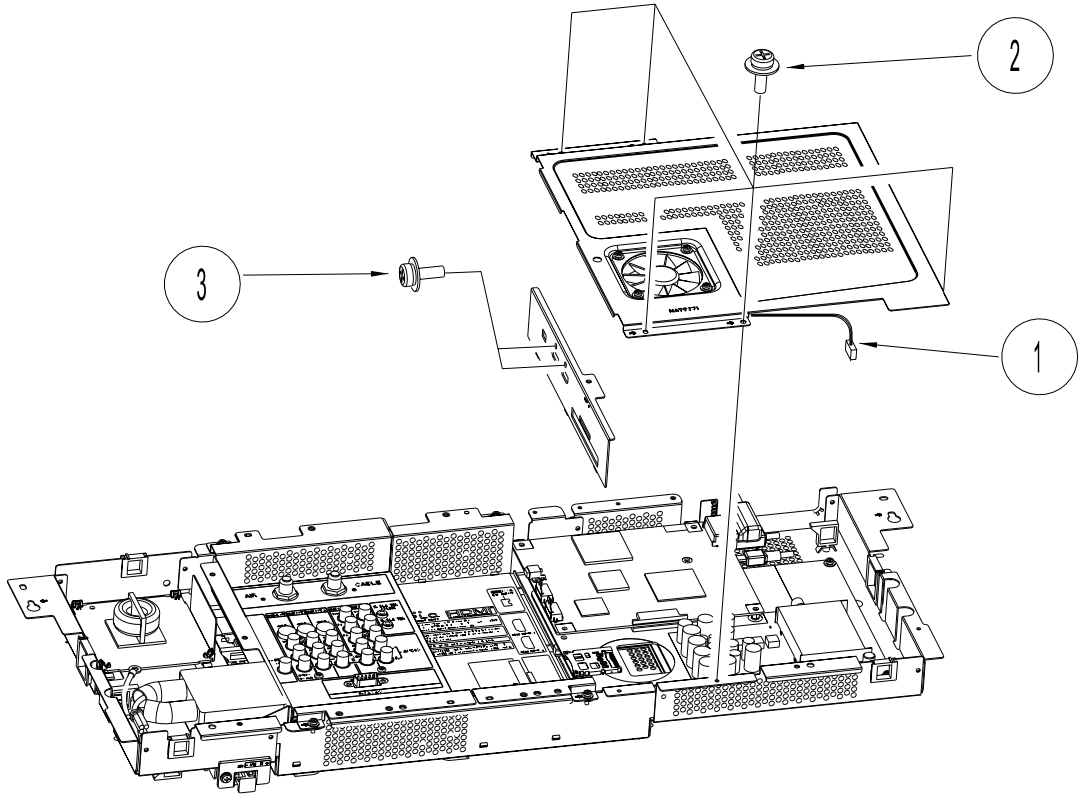


TABLE OF CONTENTS

QUICK DISASSEMBLE GUIDE(AV Digital Boards 2)

① Remove Screws M3E 3*8 P#MJ03963 (4 Pcs.)

② Remove Hex Nut P#MK01511 (2 Pcs.)
Washer P#MK01431 (2 Pcs.)

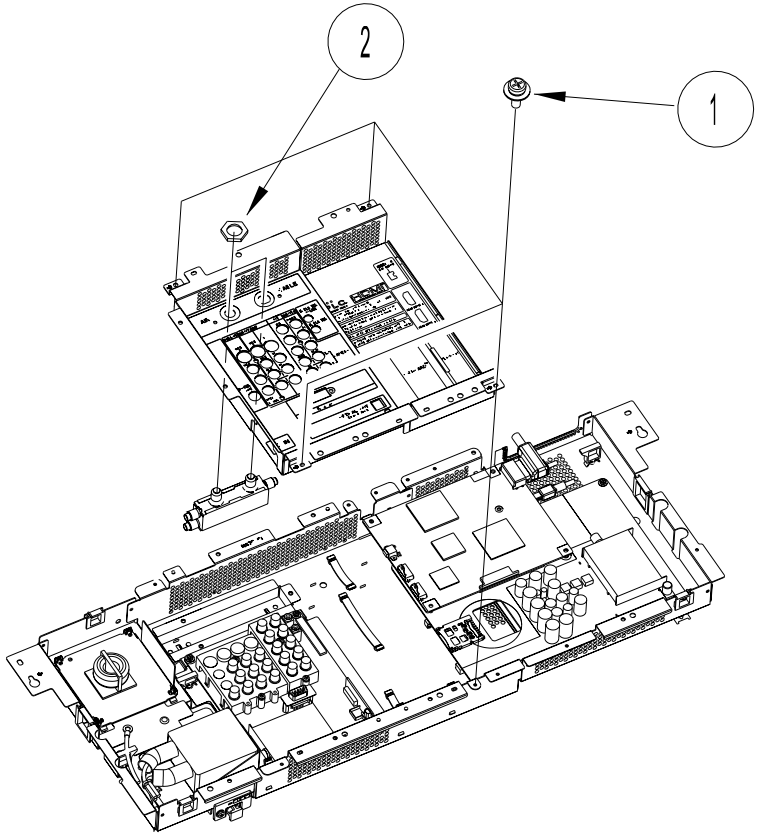


TABLE OF CONTENTS

QUICK DISASSEMBLE GUIDE(AV Digital Boards 3)

① Remove Screws M3E 3*8 P#MJ08781 (4 Pcs.)

② Remove Screws M3S 3*12 P#MJ04025 (2 Pcs.)

③ Remove Screw M3E 3*8 P#MJ03963 (1 Pc.)

④ Remove Screw Hex M3 P#MJ08731 (1 Pc.)

⑤ Remove Screws M3E 3*8 P#MJ03963 (4 Pcs.)

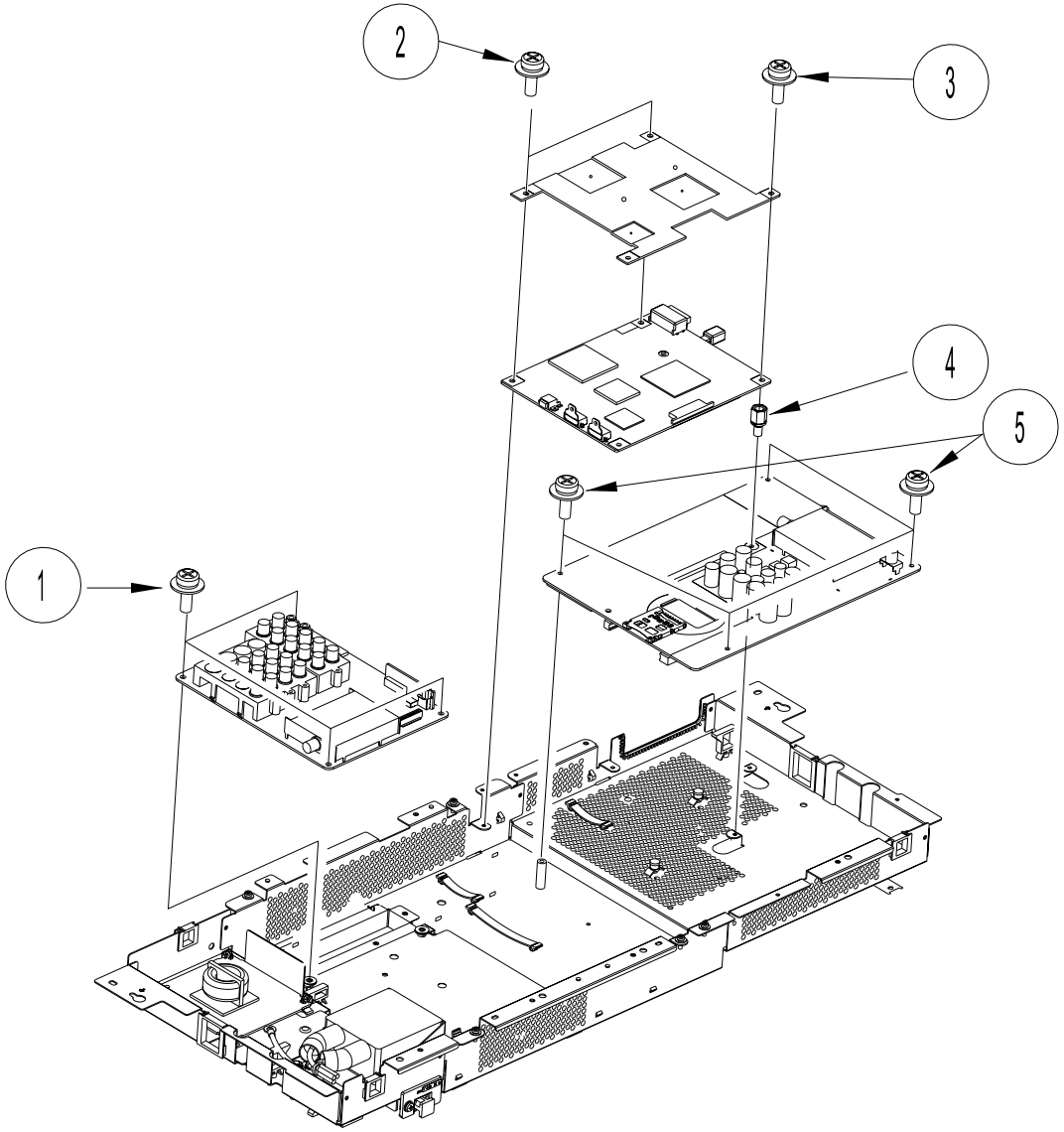
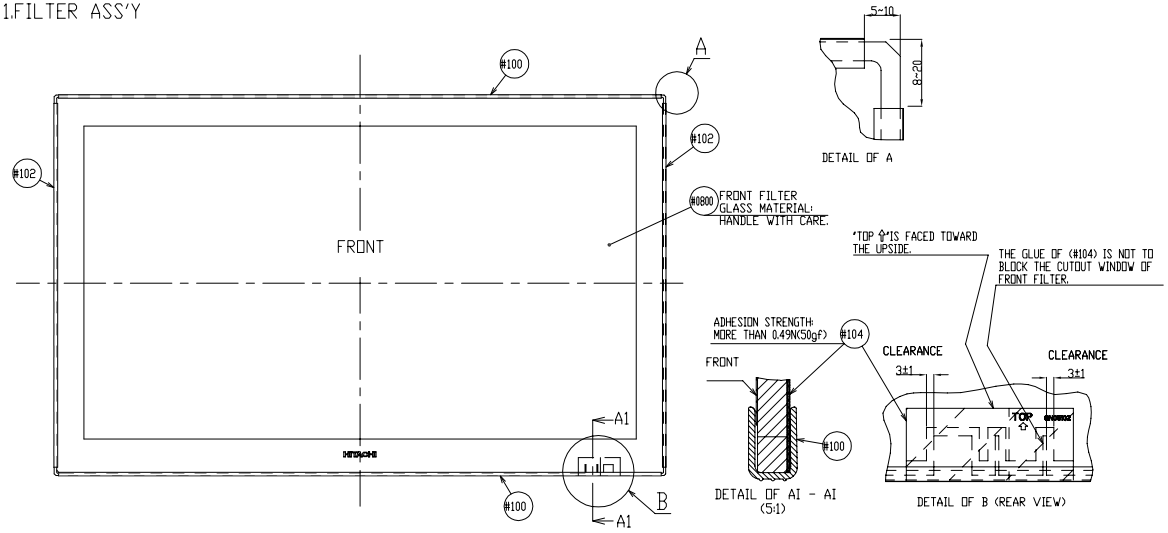


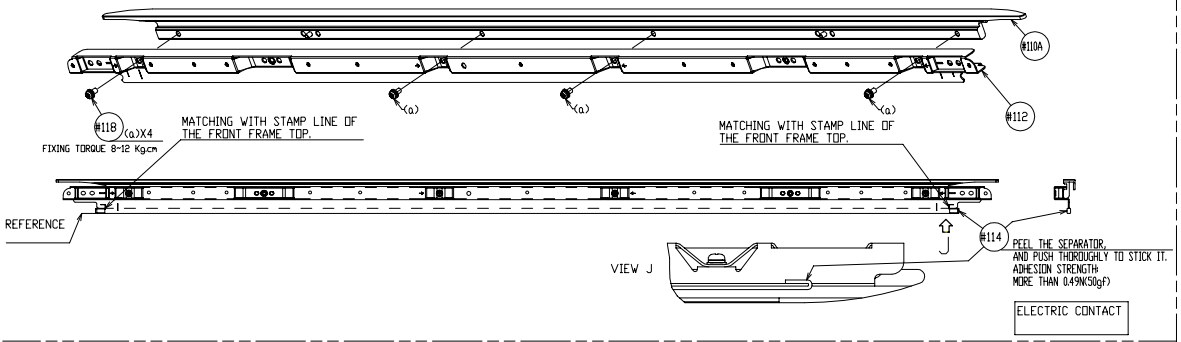
TABLE OF CONTENTS

SYMBOL#	PART #	DESCRIPTION	REMARKS
#0800	KS09932K	FRONT FILTER HDS/HDT	
#0800	KS09922K	FRONT FILTER HDX	
#100	NJ21121	DW1 42 FILT GUARD L	
#102	NJ21122	DW1 42 FILT GUARD S	
#104	QN05102	DW1-U IR SHEET	
#110A	PM29495	DW1 42 AL DECO T HDT/HDX	
#110A	PM29496	DW1 42 AL DECO T HDS	
#112	NA75231	PT8 42 F FRAME TOP	
#114	MF01651	GASKET TSC10-3-1052	
#118	MJ03618	SCREW M3 4X12 Carbon steel	
#120A	PM29505	42AL DECO B HDT/S	
#120A	PM29506	42AL DECO B HDX	
#122	NA75232	PT8 42 F FRAME TOP	
#124	MF01651	GASKET TSC10-3-1052	
#128	MJ03618	SCREW M3 4X12 Carbon steel	
#129	MJ03963	SCREW M3 3X8	
#140	NA75241	PT8 F FRAME SIDE R	
#142	MF01652	GASKET 10-3-560 US	
#144	MF01653	GASKET TSC6-3-73	
A11	JP08511	DIGITAL SUB PWB	

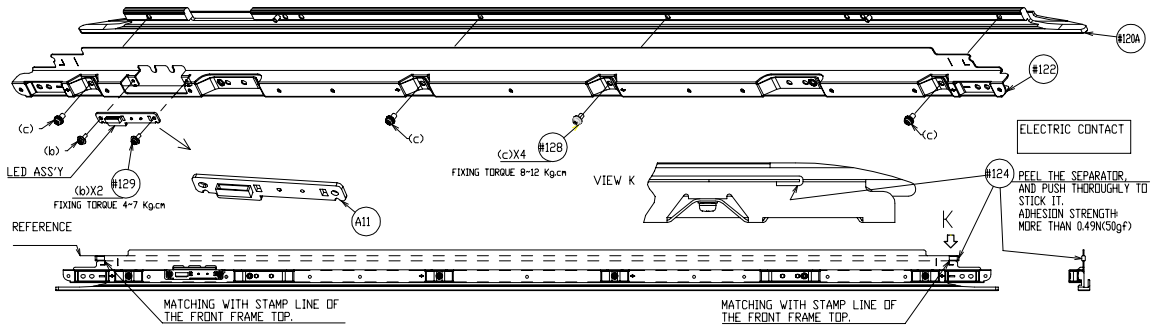
1.FILTER ASS'Y



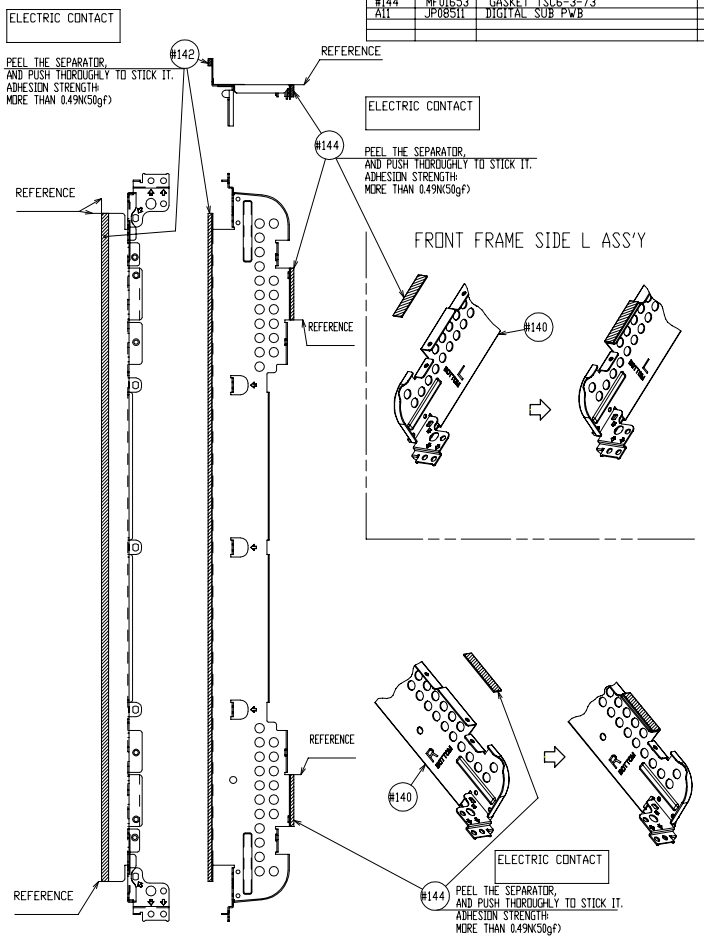
2.DECOBAR TOP ASS'Y



3.DECOBAR BOTTOM ASS'Y

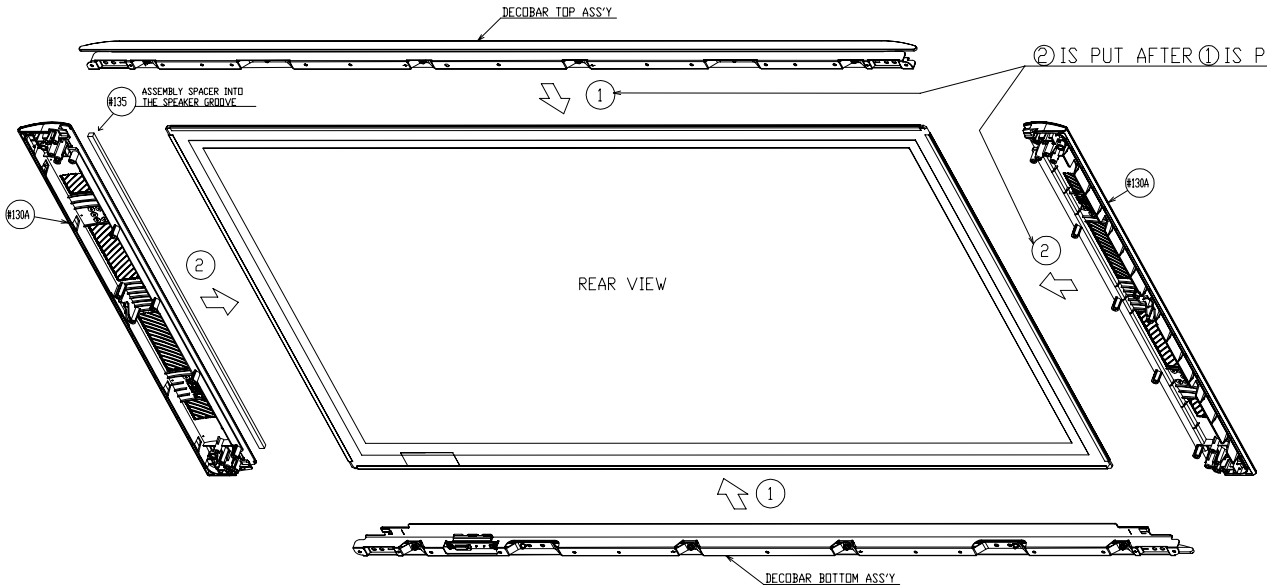


4.FRONT FRAME SIDE ASS'Y

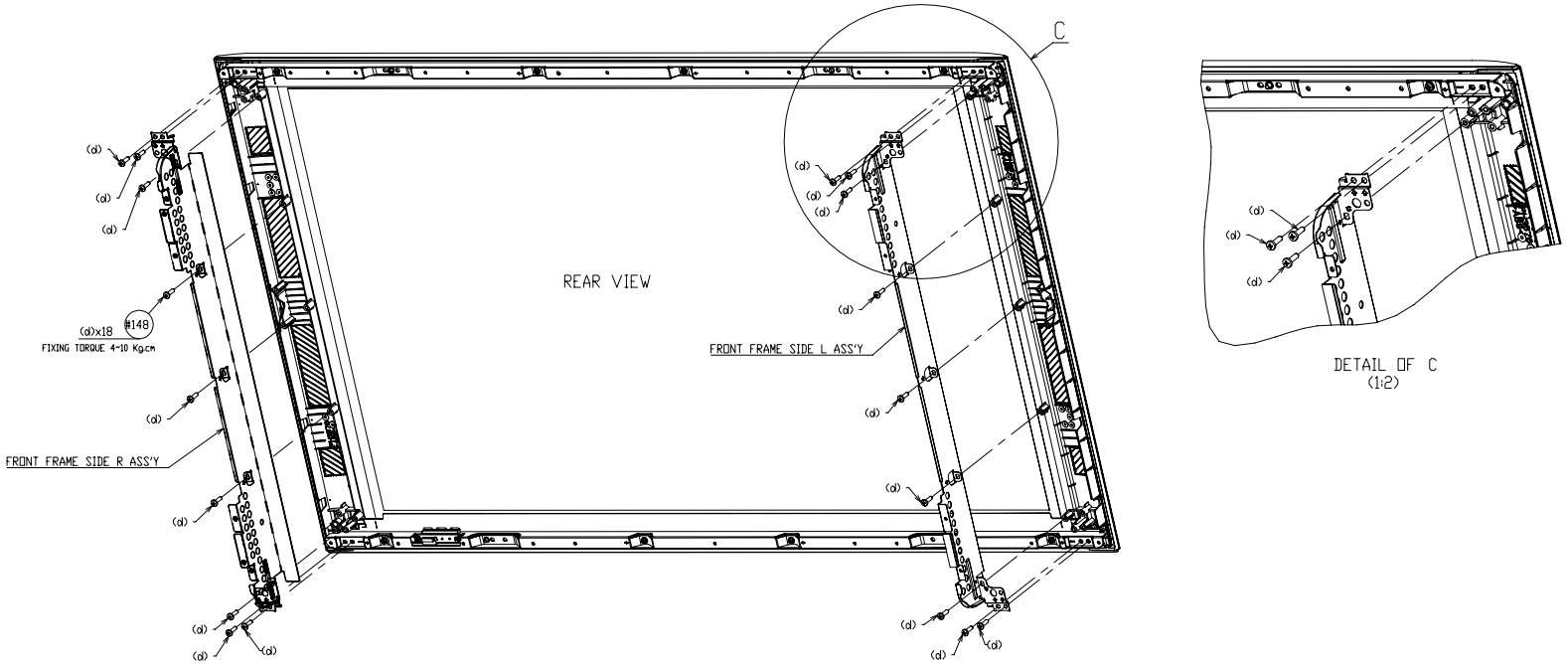


SYMBOL#	PART #	DESCRIPTION
#130A	PH36011	DW1 42 SP ASSY HDT52
#130A	PH36012	DW1 42 SP ASSY HDX62
#130A	PH36013	DW1 42 SP ASSY HDS52
#135	MN06255	SIDE SPEAKER SPACER
#148	MJ03568	SCREW T2 4X16 BD

5.BEZEL ASS'Y-1

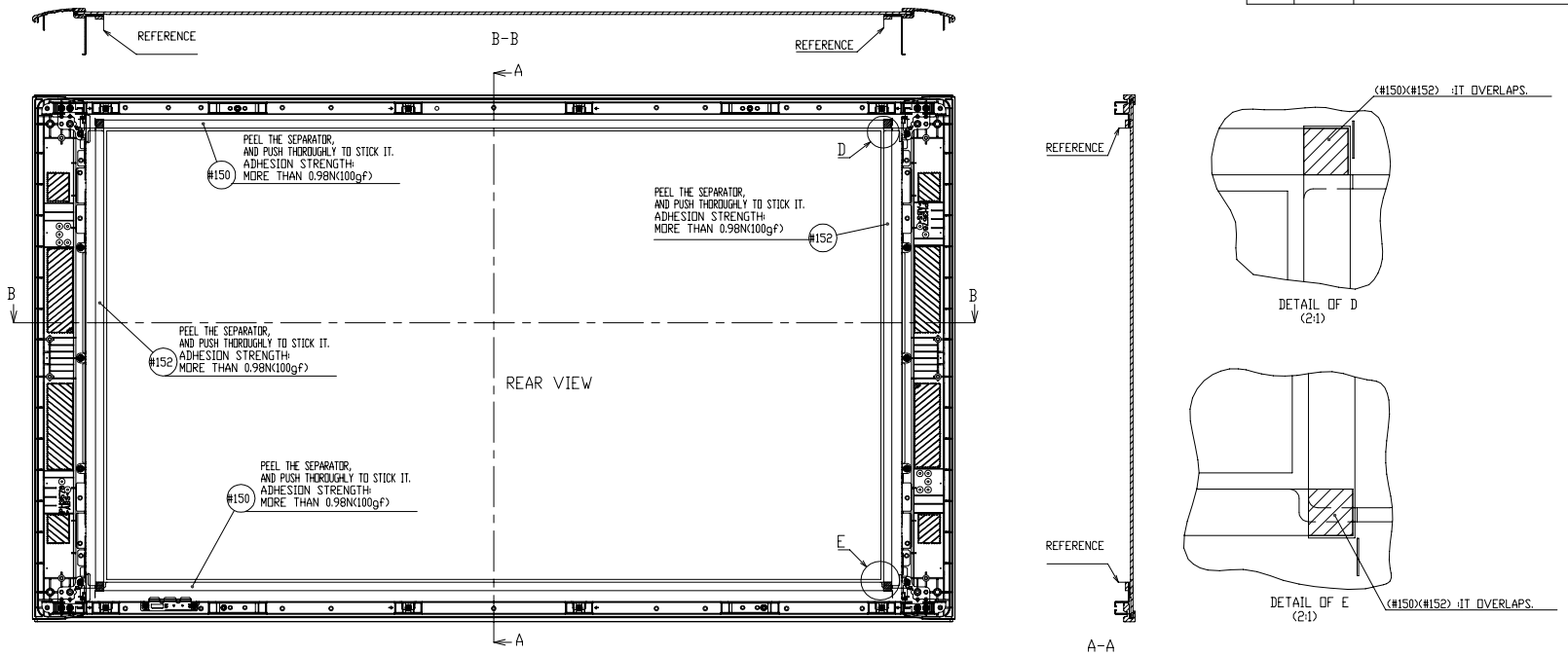


6.BEZEL ASS'Y-2

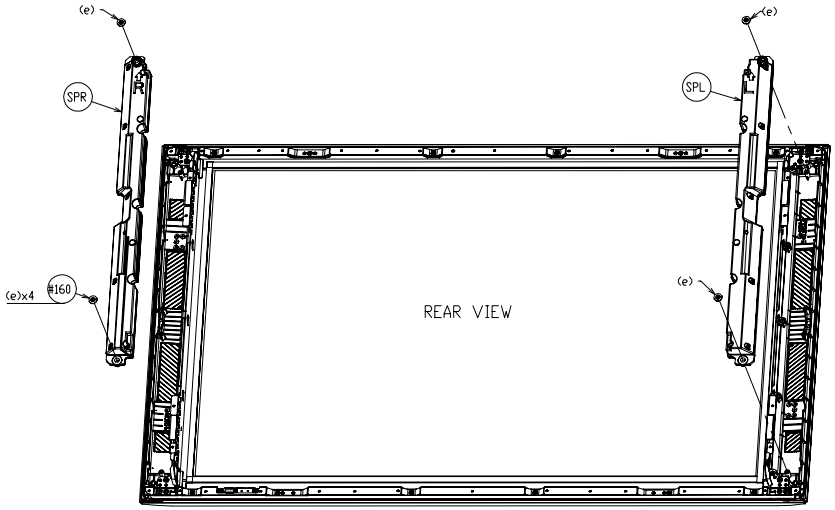


SYMBOL#	PART #	DESCRIPTION	REMARKS
#150	MN07831	DW1 42 AIR FILTER L	
#152	MN07832	DW1 42 AIR FILTER S	
#160	MJ04013	SCREW T2 4X16	
SPL	GM01623	SPU-DW1 42 SPEAKER L(HR)	
SPR	GM01624	SPU-DW1 42 SPEAKER R(HR)	
-			

7.BEZEL ASS'Y-3

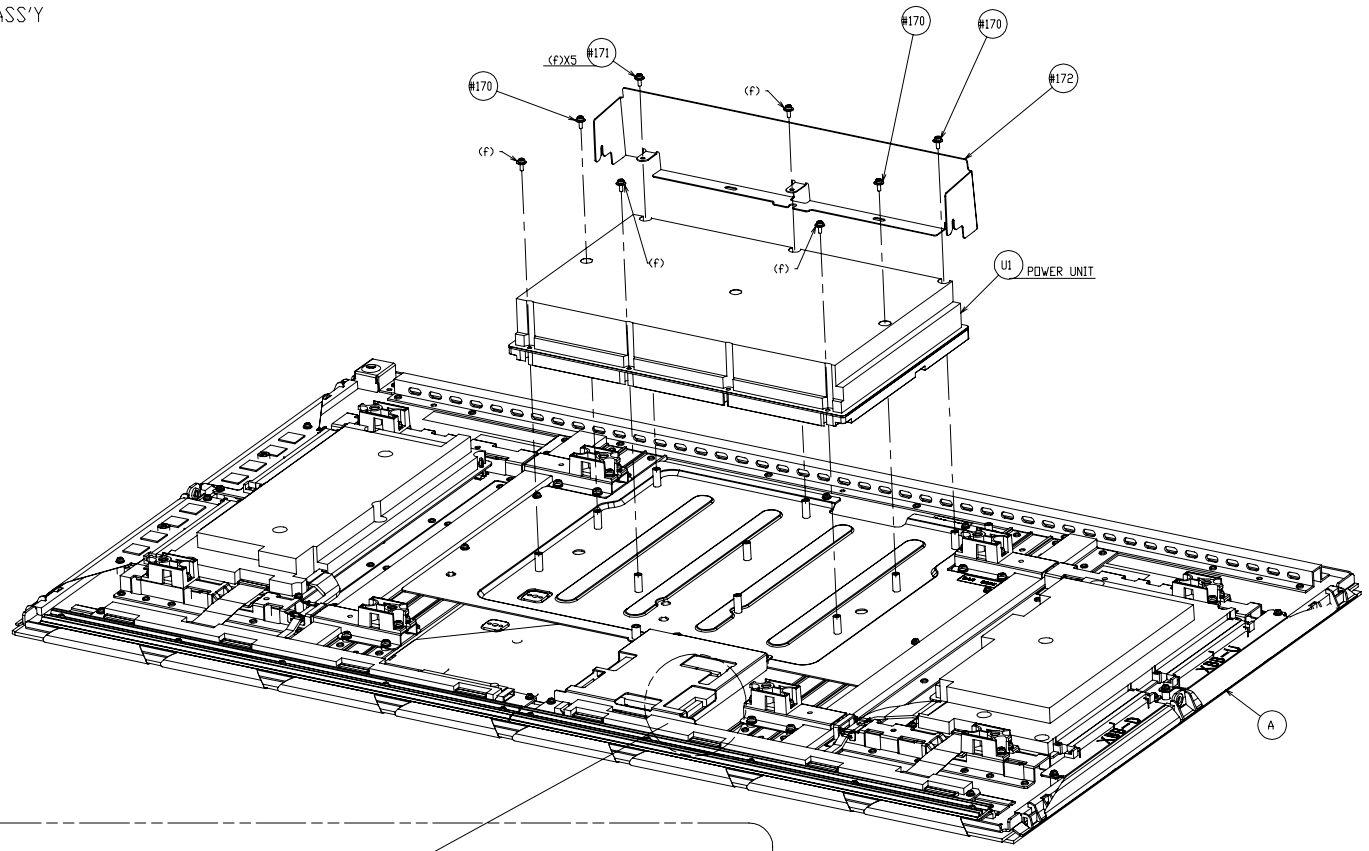


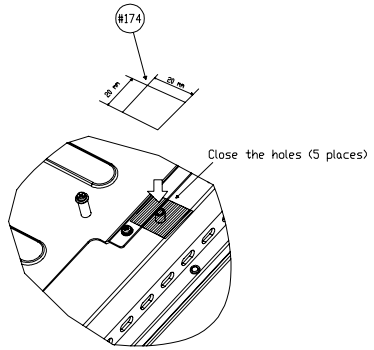
8.BEZEL ASS'Y-4

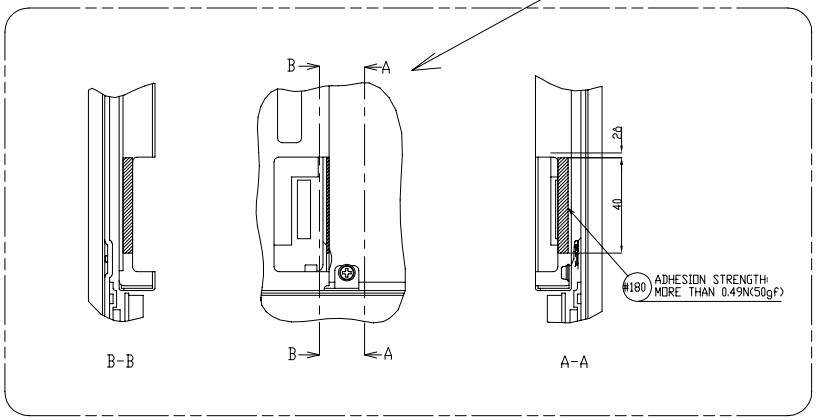


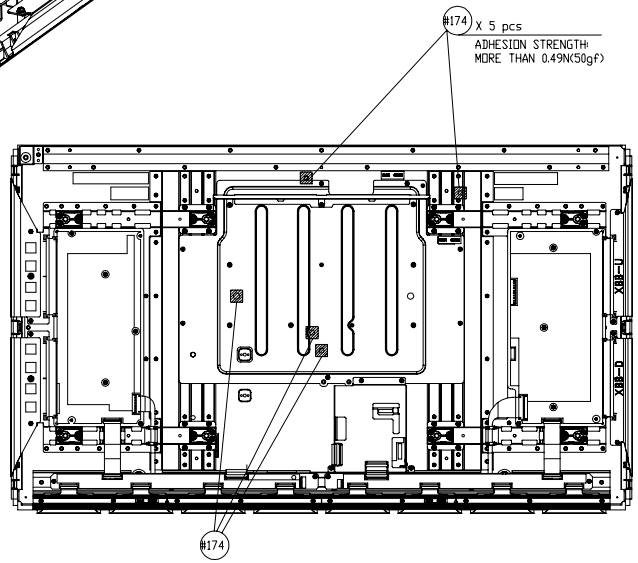
SYMBOL#	PART #	DESCRIPTION	REMARKS
#170	MJ03963	SCRW M3 3X8	
#171	MJ03598	SCRW M3 3X8	
#174	9449545W	NITTO TAPE NO.5 W20 (BLACK)	
#180	9449507W	NITTO TAPE NO.5 W9 (BLACK)	
A01	DD00672K	A2 PANEL 42 FPF42C1281280D-85	
U1	HA0157I	POWER SUPPLY-LSEP1198A1HB	

9.POWER UNIT ASS'Y





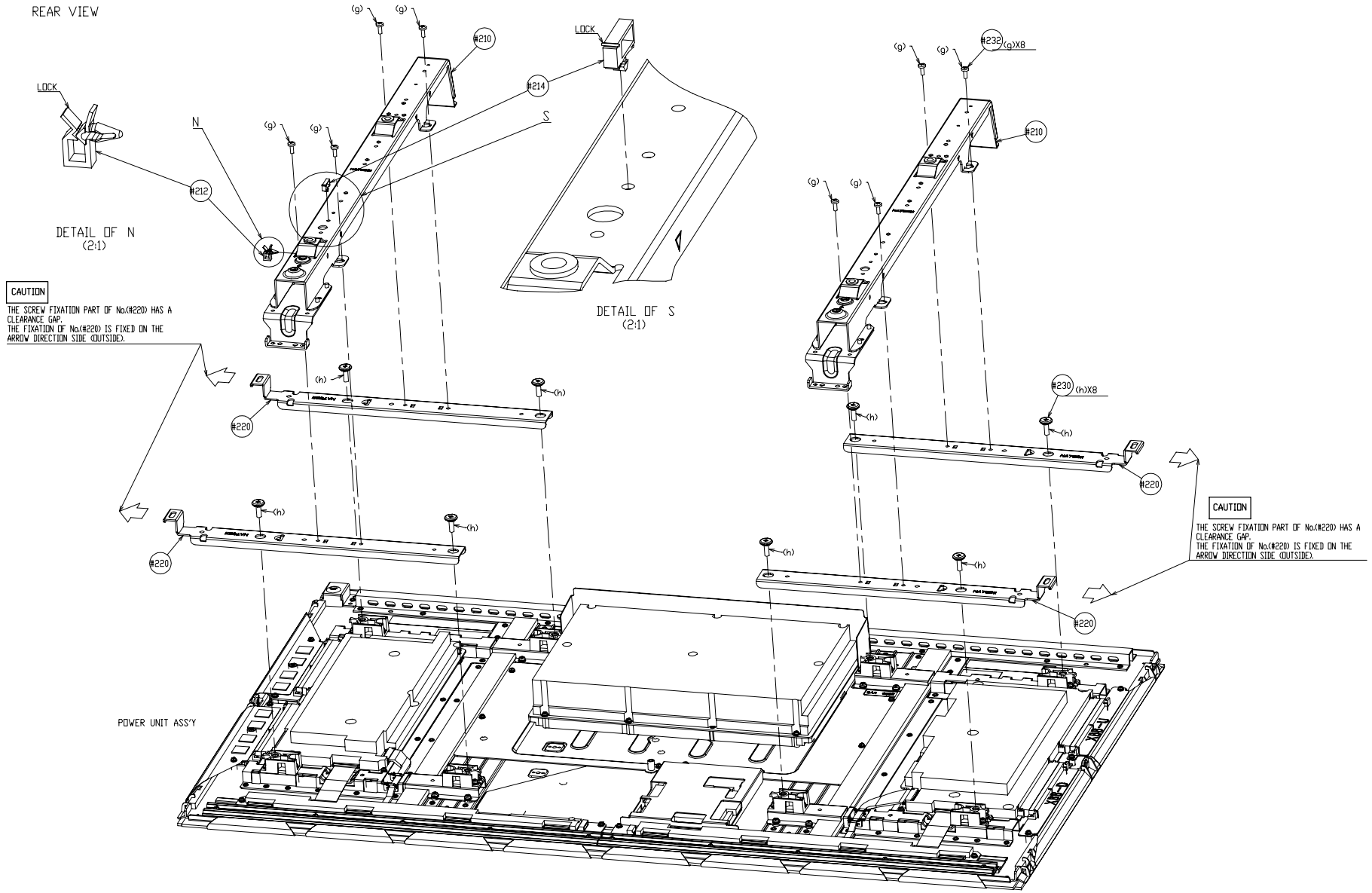




SYMBOL#	PART #	DESCRIPTION	REMARKS
#210	NA75261	DW1 42 MAIN FRAME	
#212	ML02071	WIRE CLAMP S-5-V0	
#214	ML01252	WIRE CLAMP	
#220	NA75211	DW1 42 SUB FRAME A	
#230	MJ03954	SCRW M3 5X14	
#232	MJ03895	SCRW M3 4X10	

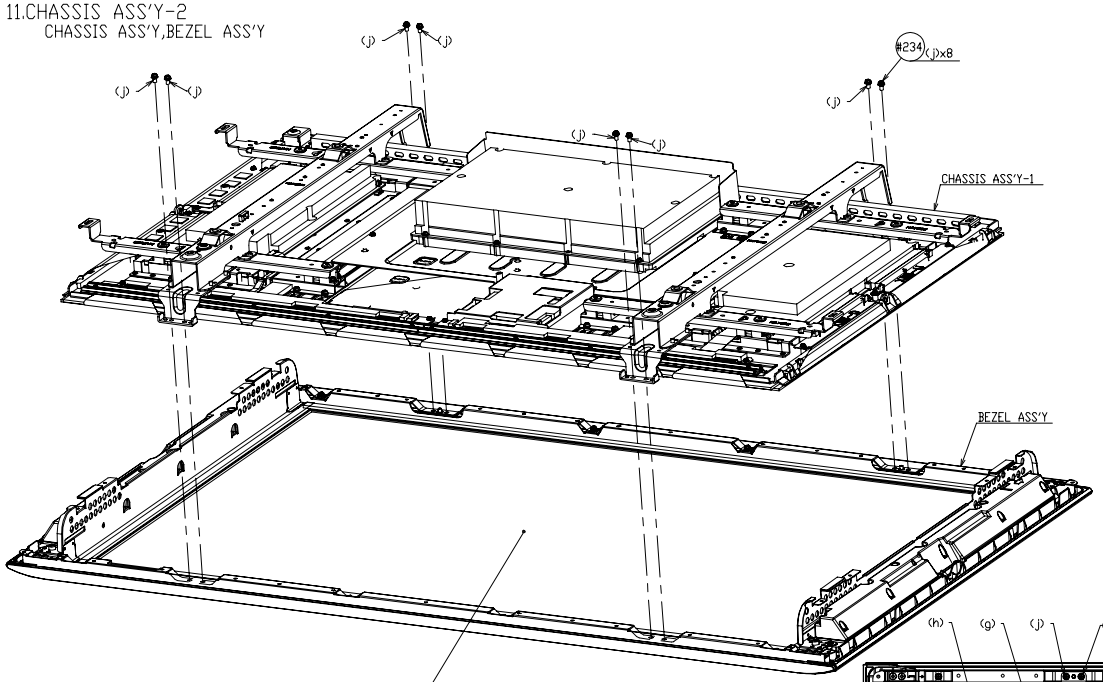
10.CHASSIS ASS'Y-1

REAR VIEW



SYMBOL#	PART #	DESCRIPTION	REMARKS
#210	NA75261	DW1 42 MAIN FRAME	
#212	ML02071	WIRE CLAMP S-5-V0	
#214	ML01252	WIRE CLAMP	
#220	NA75211	DW1 42 SUB FRAME A	
#230	MJ03954	SCREW M3 5X14	
#232	MJ03895	SCREW M3 4X10	
#234	MJ03618	SCREW M3 4X12 Carbon steel	
UI	HA01571	POWER SUPPLY-LSEP1198AIHB	

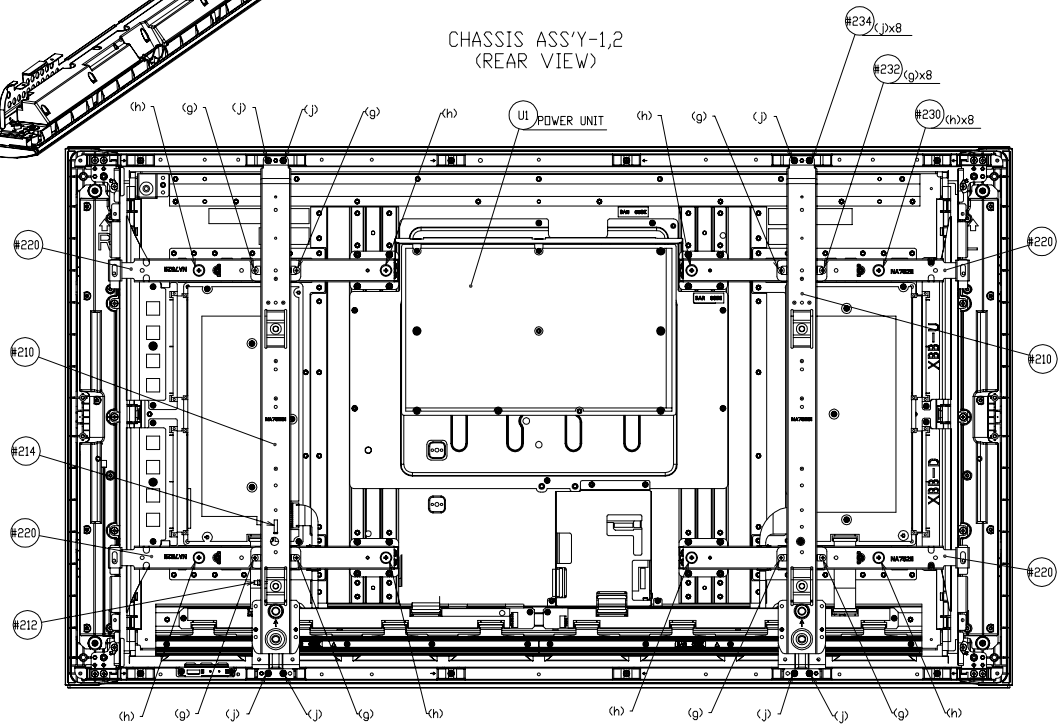
11.CHASSIS ASS'Y-2
CHASSIS ASS'Y,BEZEL ASS'Y



CAUTION

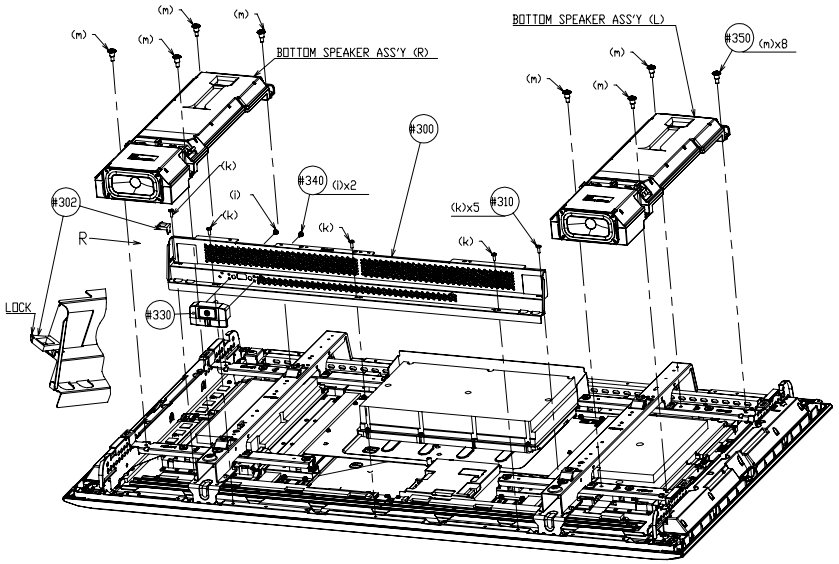
THERE SHOULD BE NO DUST AND SO ON BETWEEN (#0800) AND "PDP MODULE".
(AIR SPRAYING)

CHASSIS ASS'Y-1,2
(REAR VIEW)

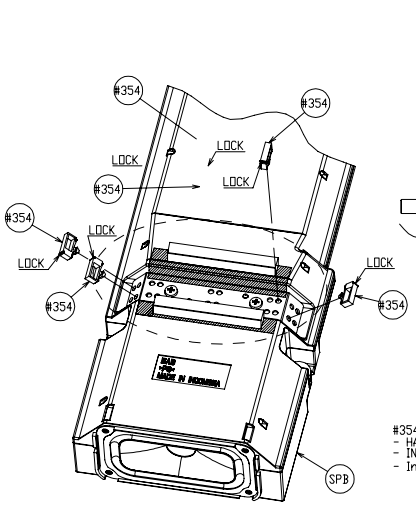


SYMBOL#	PART #	DESCRIPTION	REMARKS
#300	NA75401	DW1 BOTTOM COVER	
#302	NJ02902	LOCK WIRE SDL LWSSIN	
#310	MJ03895	SCREW M3 4X10	
#330	PC06501K	DW1 POWER BUTTON ASS'Y	
#340	MJ03733	SCREW T2 3X10	
#350	MJ03959	SCREW M3 5X17	
#356	MF01671	GASKET 10-10-75 51K	
#358	ME04551	DW1 42 CABLE SHIELD	
#360	MF01671	GASKET 10-10-75 51K	
SPB	GM01632	SUB WOOFER SPU-DW1 42	
-			
-			
-			

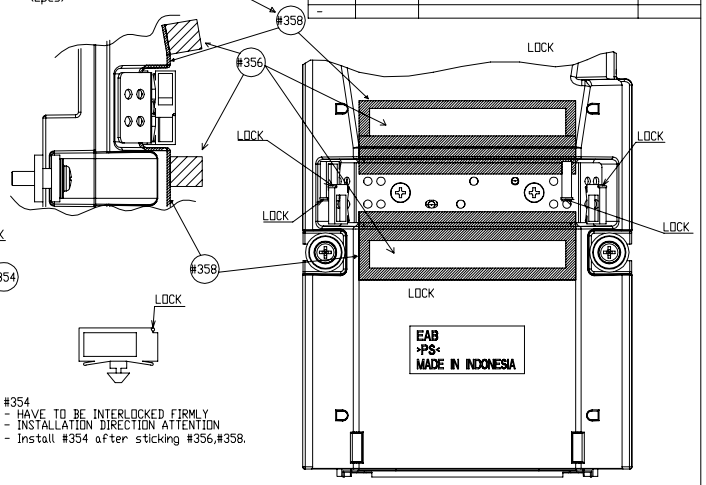
?2.CHASSIS ASS'Y-3



BOTTOM SPEAKER ASS'Y (L)

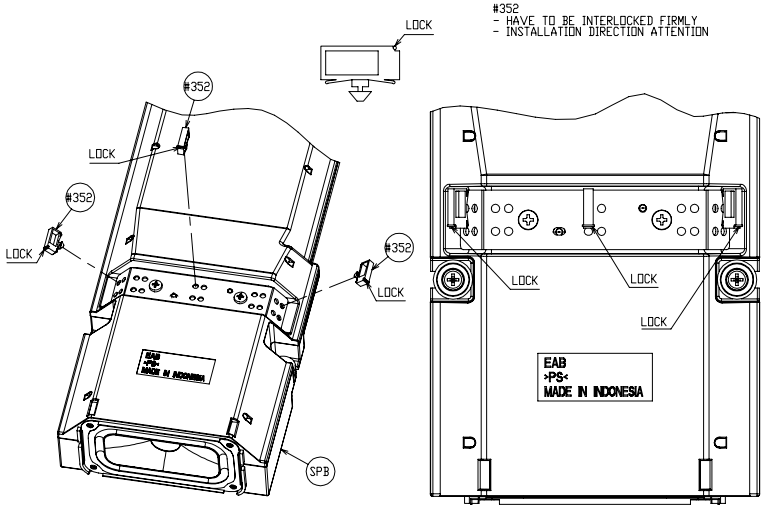


Adhesion strength : More than 0.49N(50gf)
Secure about 4 mm and connect metal fiting with the copper foil tape securely about the posting free of the copper foil tape (2pcs)



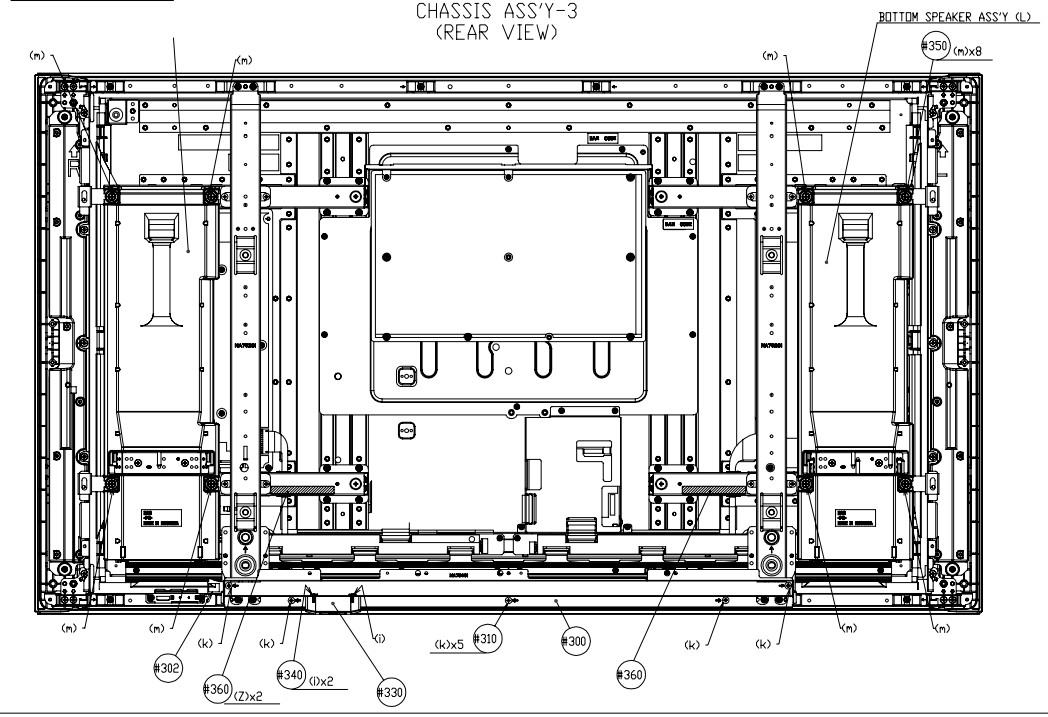
#354
- HAVE TO BE INTERLOCKED FIRMLY
- INSTALLATION DIRECTION ATTENTION
- Install #354 after sticking #356,#358.

BOTTOM SPEAKER ASS'Y (R)



#352
- HAVE TO BE INTERLOCKED FIRMLY
- INSTALLATION DIRECTION ATTENTION

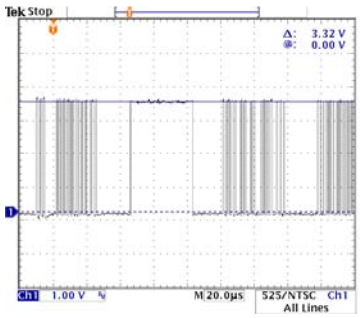
CHASSIS ASS'Y-3
(REAR VIEW)



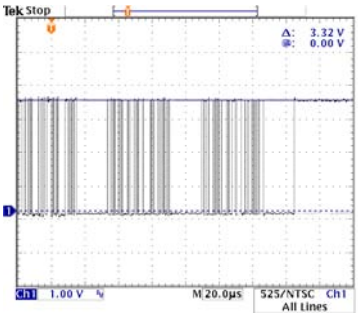
WAVEFORMS AT EACH SECTION

Numbers inside circle correspond to locations shown in the circuit diagram. Waveforms taken using a Color Bar signal with H sync 31 khz and V. sync 60 hz and a X10 probe.
Signal amplitude and DC level shown at Δ and @ respectively.

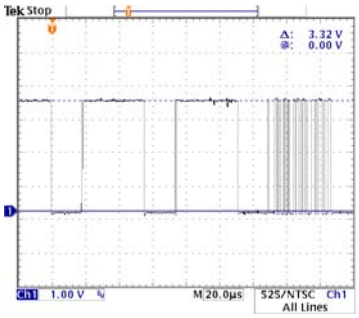
1 IT08 Pin 42



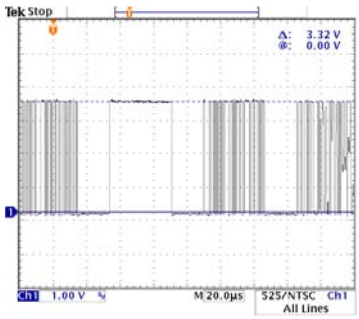
2 IT08 Pin 44



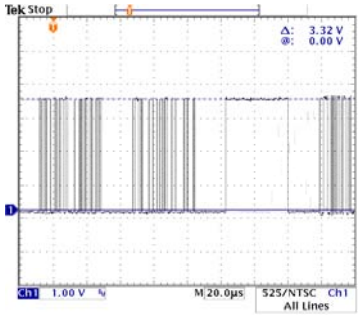
3 IT08 Pin 45



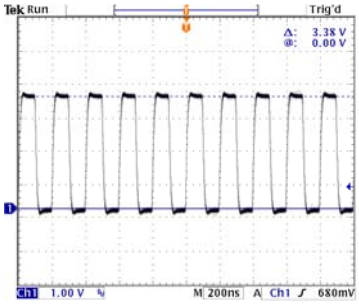
4 IT08 Pin 47



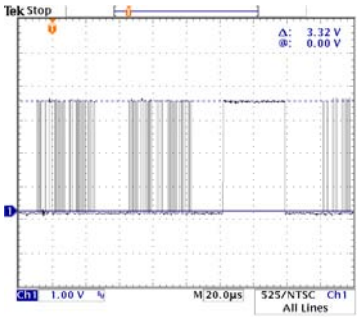
5 IT08 Pin 48



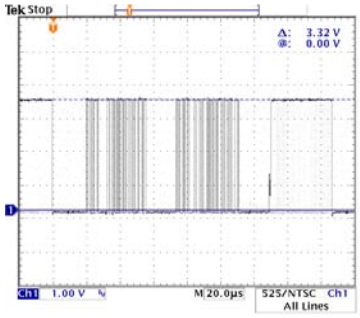
6 IT08 Pin 50



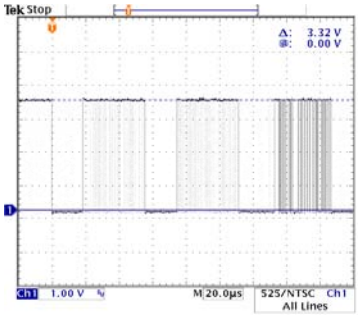
7 IT08 Pin 52



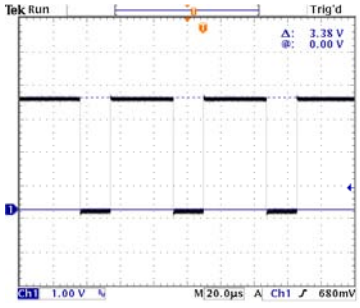
8 IT08 Pin 54



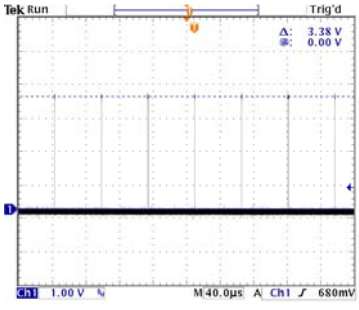
9 IT08 Pin 58



10 IT08 Pin 59



11 IT08 Pin 64



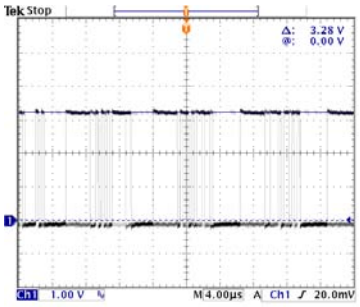
SATURN
SUBDIGITAL PWB
TUNER

click here to go to circuit diagram

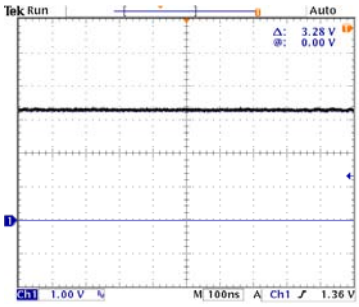
WAVEFORMS AT EACH SECTION

Numbers inside circle correspond to locations shown in the circuit diagram. Waveforms taken using a Color Bar signal with H sync 31 khz and V. sync 60 hz and a X10 probe.
Signal amplitude and DC level shown at Δ and @ respectively.

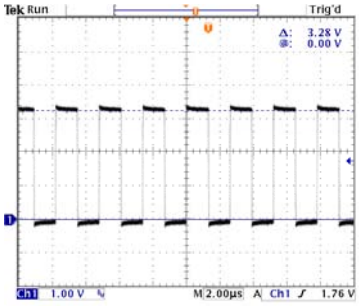
(12) I401 Pin 31



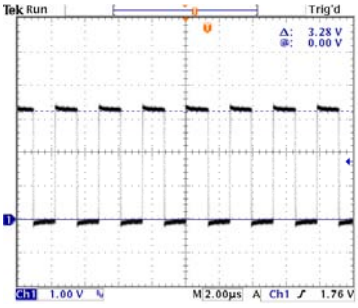
(13) I401 Pin 39



(14) I401 Pin 41



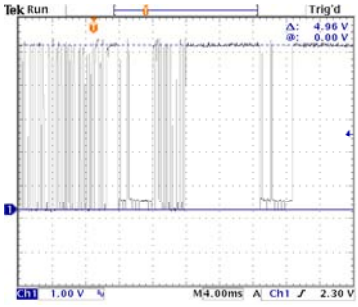
(15) I401 Pin 45



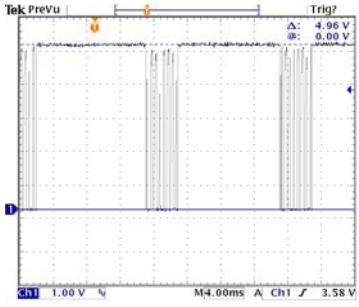
SATURN
SUBDIGITAL PWB
DIGITAL AUDIO

click here to go to circuit diagram

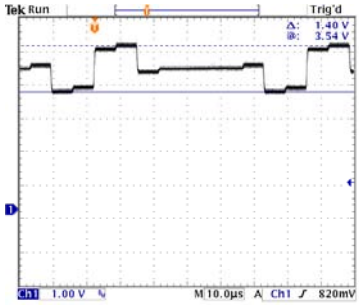
(16) I101 Pin 45



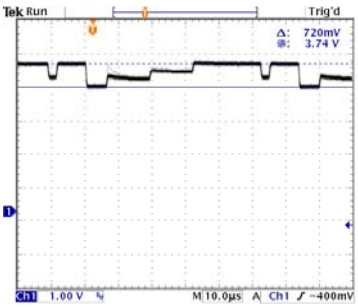
(17) I101 Pin 46



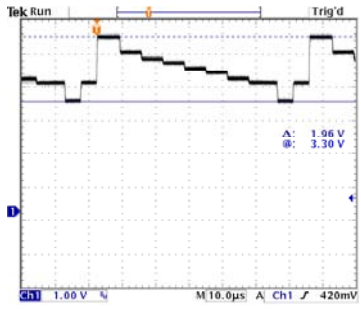
(18) I101 Pin 54



(19) I101 Pin 55



(20) I101 Pin 56



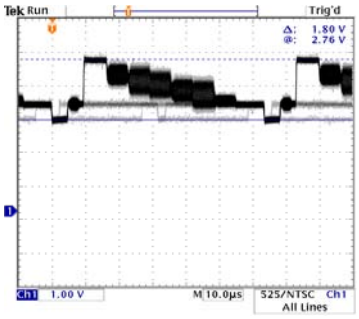
TERMINAL PWB
VIDEO SELECTOR

click here to go to circuit diagram

WAVEFORMS AT EACH SECTION

Numbers inside circle correspond to locations shown in the circuit diagram. Waveforms taken using a Color Bar signal with H sync 31 khz and V. sync 60 hz and a X10 probe.
Signal amplitude and DC level shown at Δ and @ respectively.

(21) I101 Pin 60



TERMINAL PWB
VIDEO SELECTOR
click here to go to circuit diagram

Symbol	Pin No.	Voltage
UTJ1	1	0
	2	5 V
	3	0
	4	14 V
	5	2.4 V
	6	0
	7	5 V
	8	2.5 V
	9	0.35 V
	10	5 V
	11	2.6 V
	12	2.5 V
	13	2.2 V
	14	0
	15	2.3 V
	16	2.3 V
	17	0
	18	5 V
	19	0
	20	5 V

Symbol	Pin No.	Voltage
UT01	1	0
	2	5 V
	3	0
	4	14.6 V
	5	8.3 V
	6	0
	7	5 V
	8	3.3 V
	9	5 V
	10	5 V
	11	0
	12	0
	13	0
	14	0
	15	0
	16	0
	17	0
	18	5 V
	19	0
	20	0

Symbol	Pin No.	Voltage
CN68	1	5 V
	2	0
	3	3.3 V
	4	0
	5	1.7 V
	6	1.4 V
	7	3.3 V
	8	3.3 V
	9	3.3 V

Symbol	Pin No.	Voltage
CNPPD	1	5.7 V
	2	5.7 V
	3	5.7 V
	4	0
	5	0

Symbol	Pin No.	Voltage
CN61	1	1.6 V
	2	NC
	3	125 V
	4	NC
	5	NC
	6	0.65 V

Symbol	Pin No.	Voltage
CN63	1	5.4 V
	2	0
	3	3.3 V
	4	0
	5	3.3 V
	6	3.3 V
	7	3.3 V

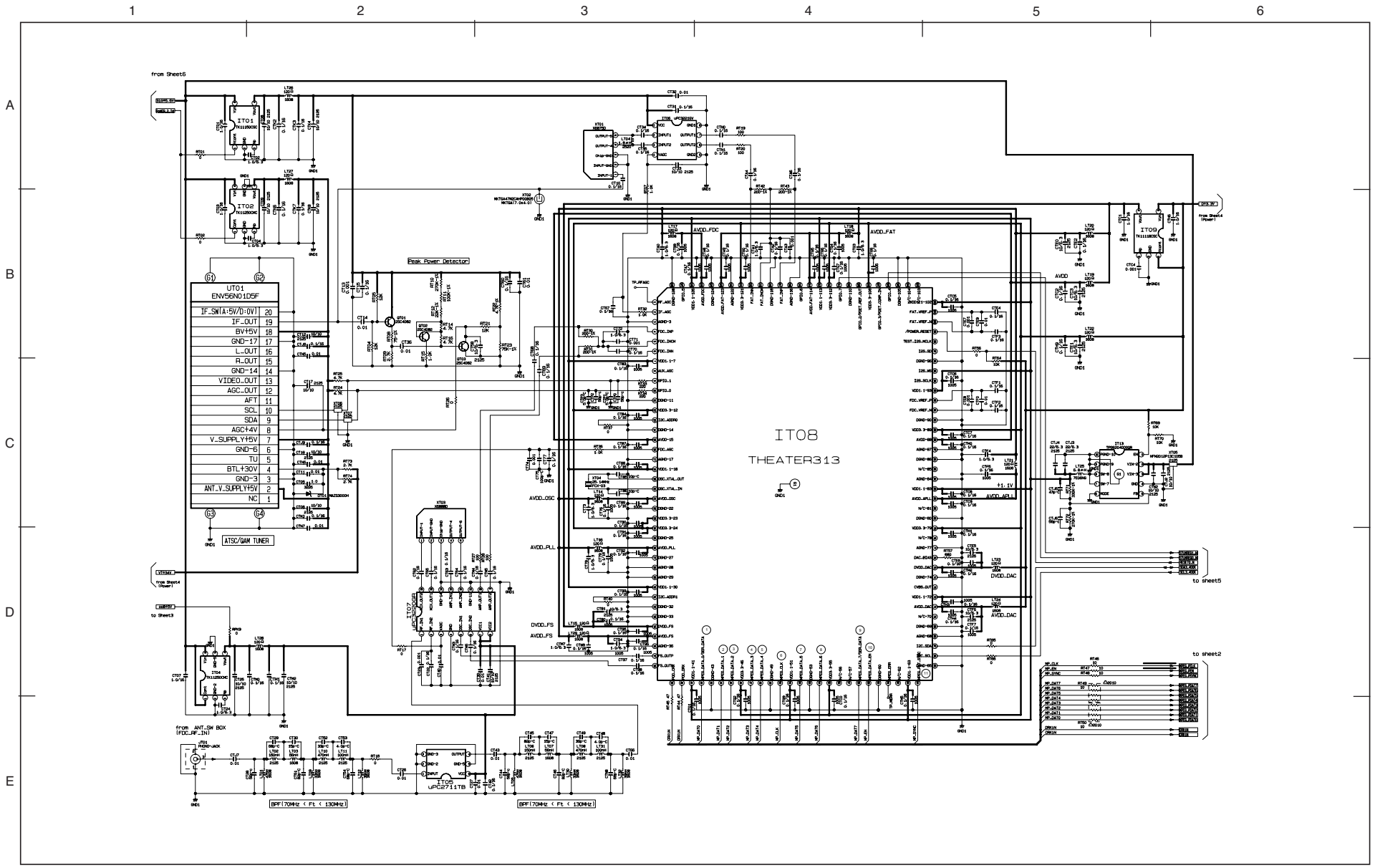
Symbol	Pin No.	Voltage
CNPPS	1	16.5 V
	2	16.5 V
	3	0
	4	0
	5	25 V
	6	25 V
	7	0
	8	0
	9	10.5 V
	10	0
	11	0
	12	10.5 V

Symbol	Pin No.	Voltage	Pin No.	Voltage
CN64	1	63.4 V	6	0
	2	NC	7	NC
	3	5 V	8	84.7 V
	4	0	9	84.7 V
	5	0	10	84.7 V

TABLE OF CONTENTS

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



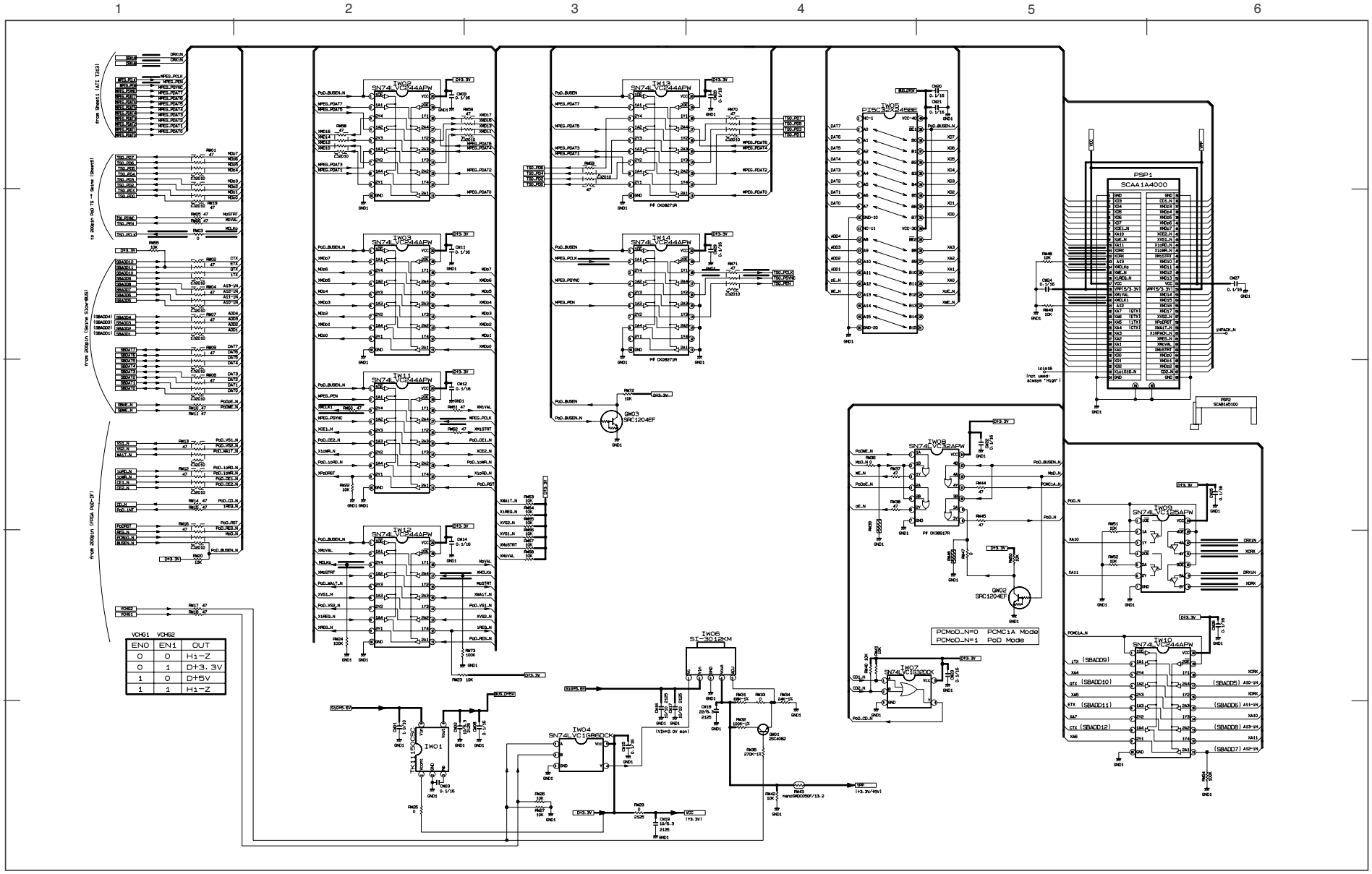
- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TUNER

TABLE OF CONTENTS

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

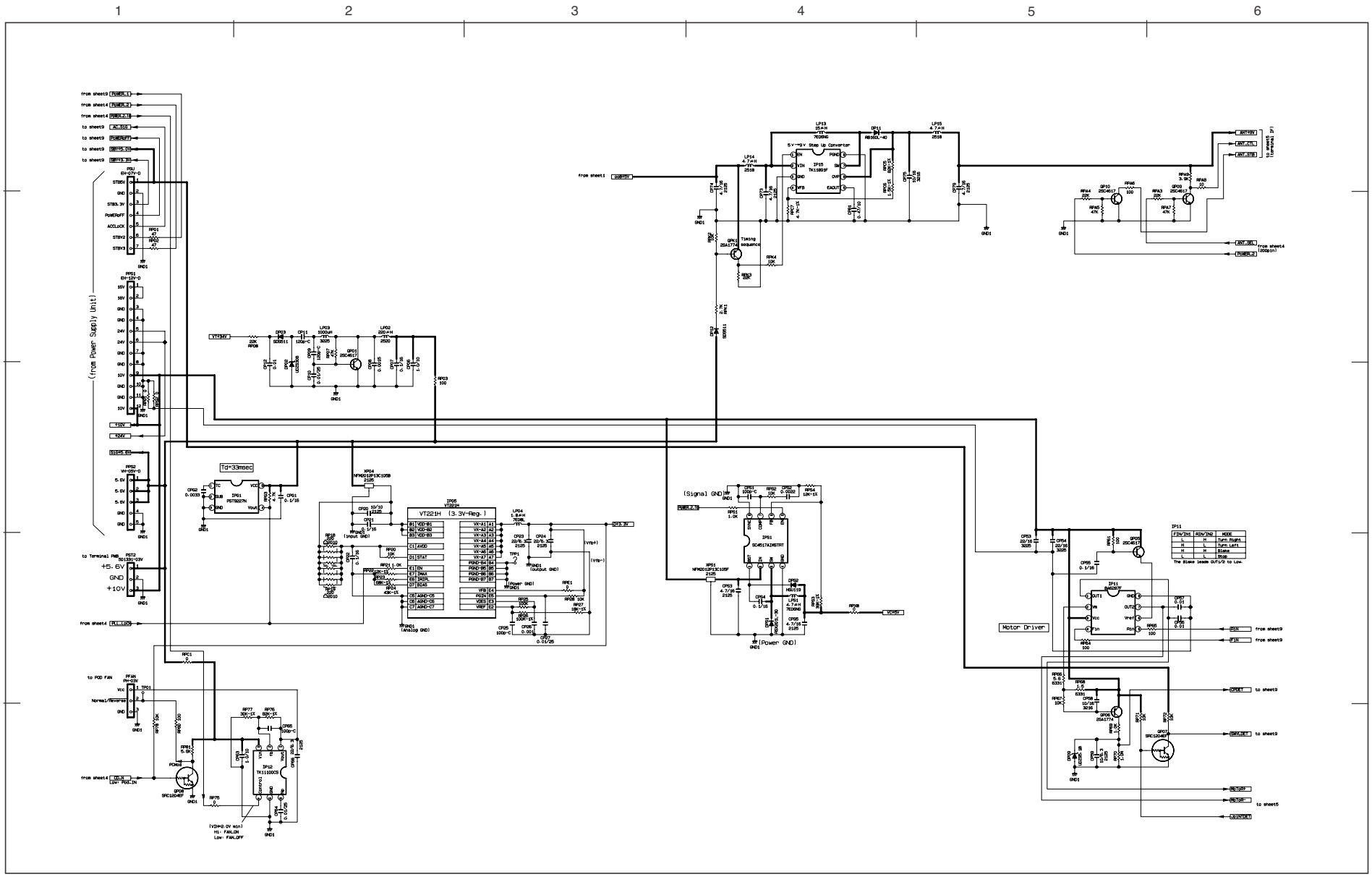


POD-I/F

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

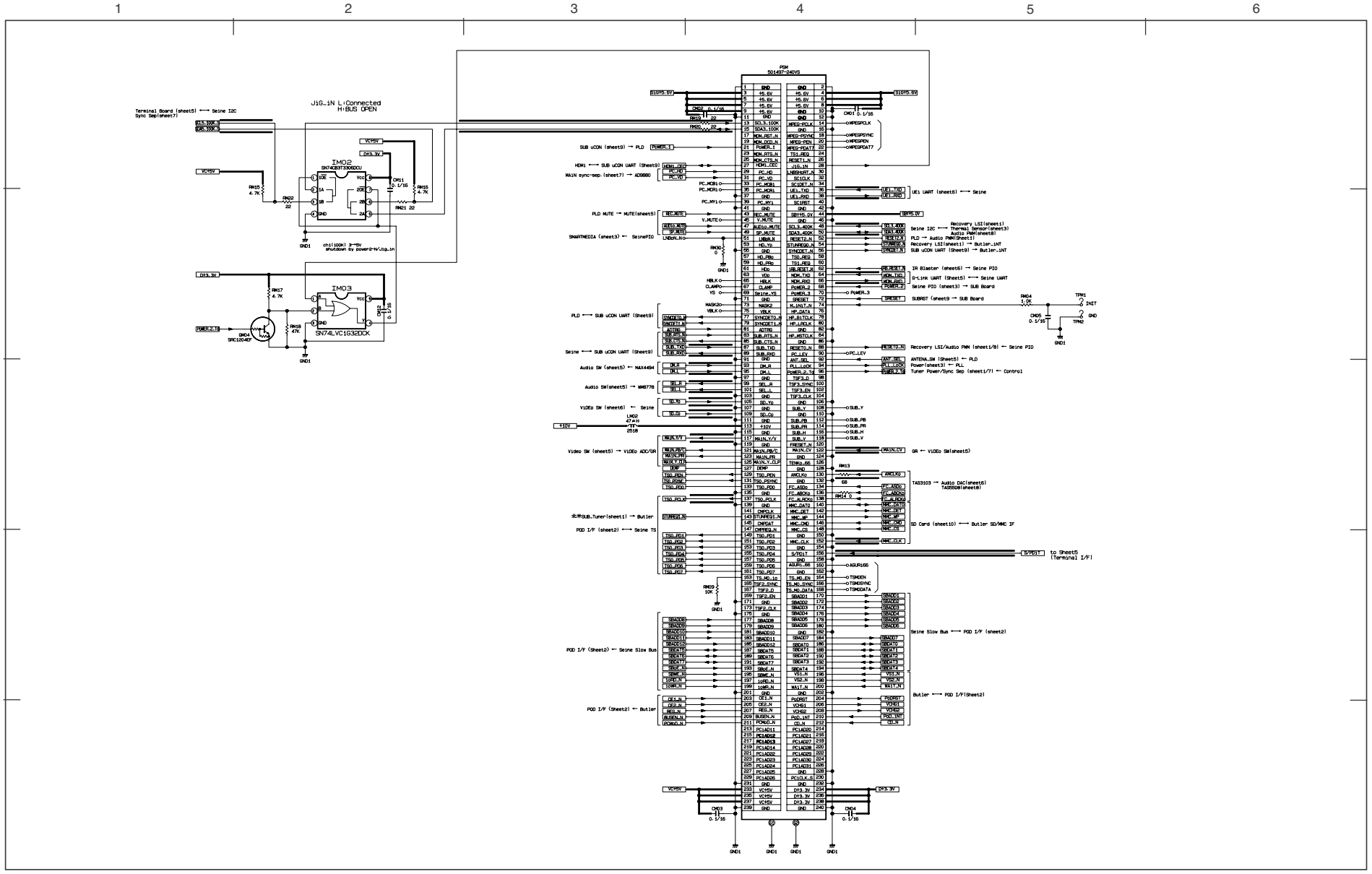
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

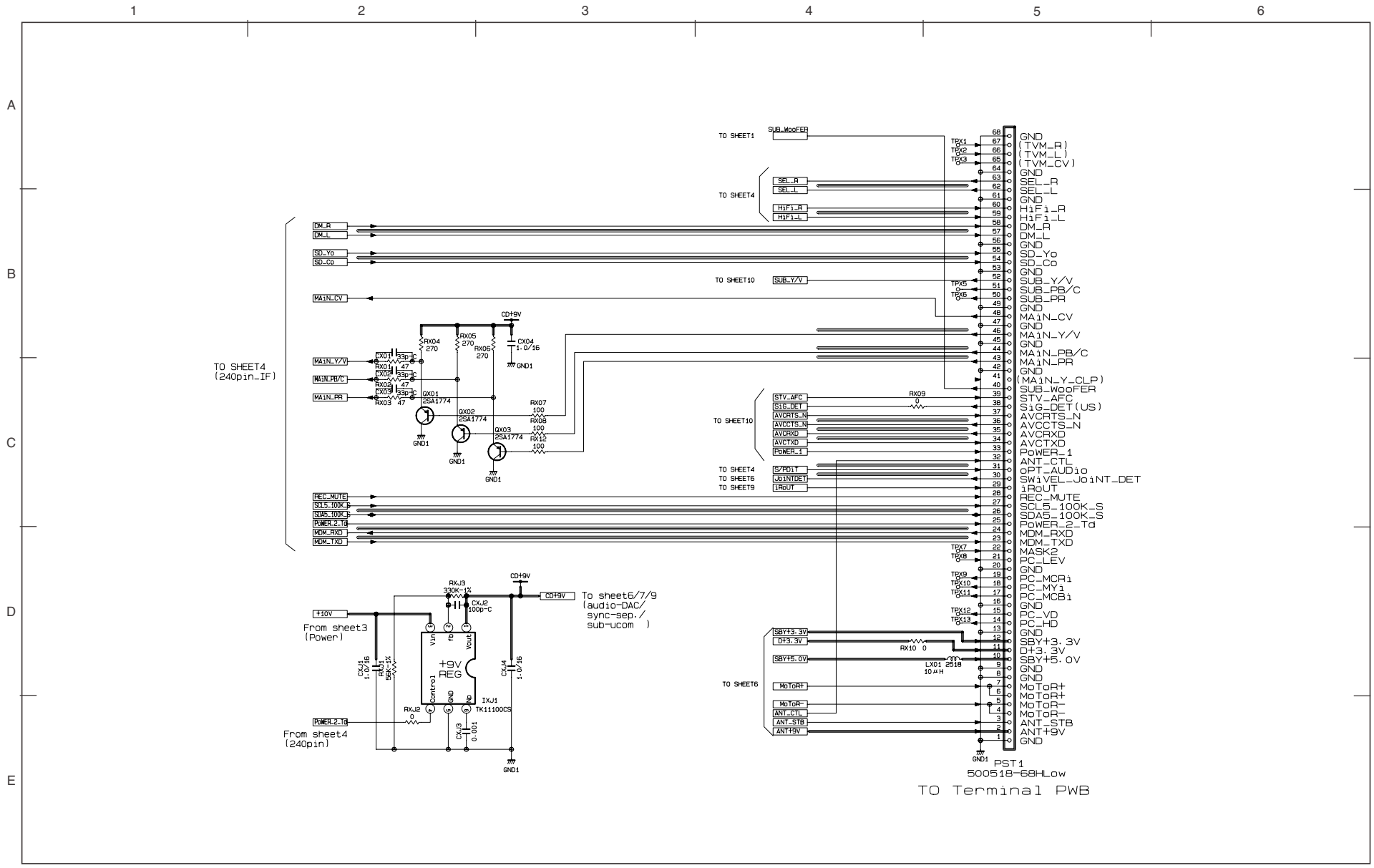
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

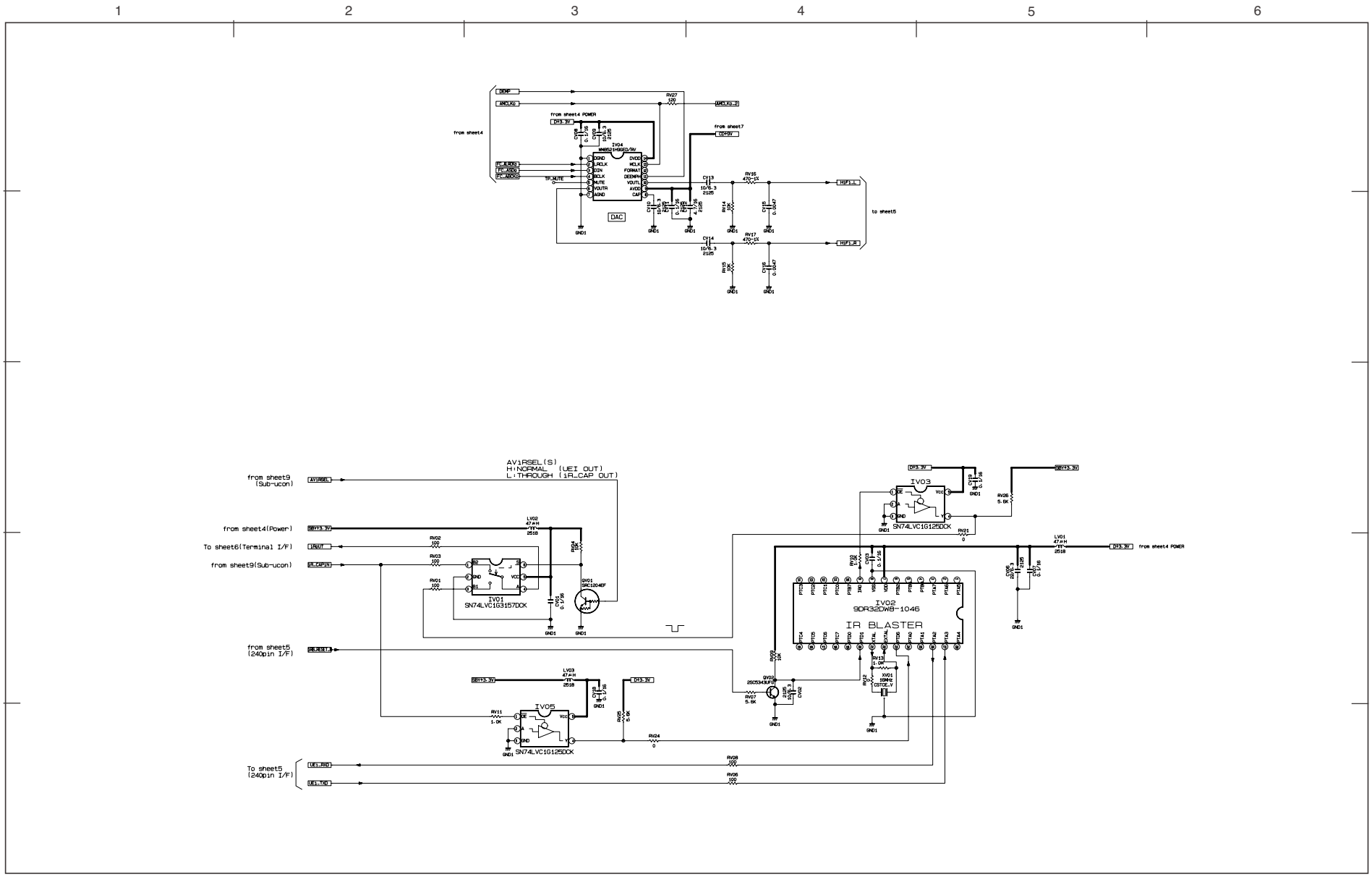
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

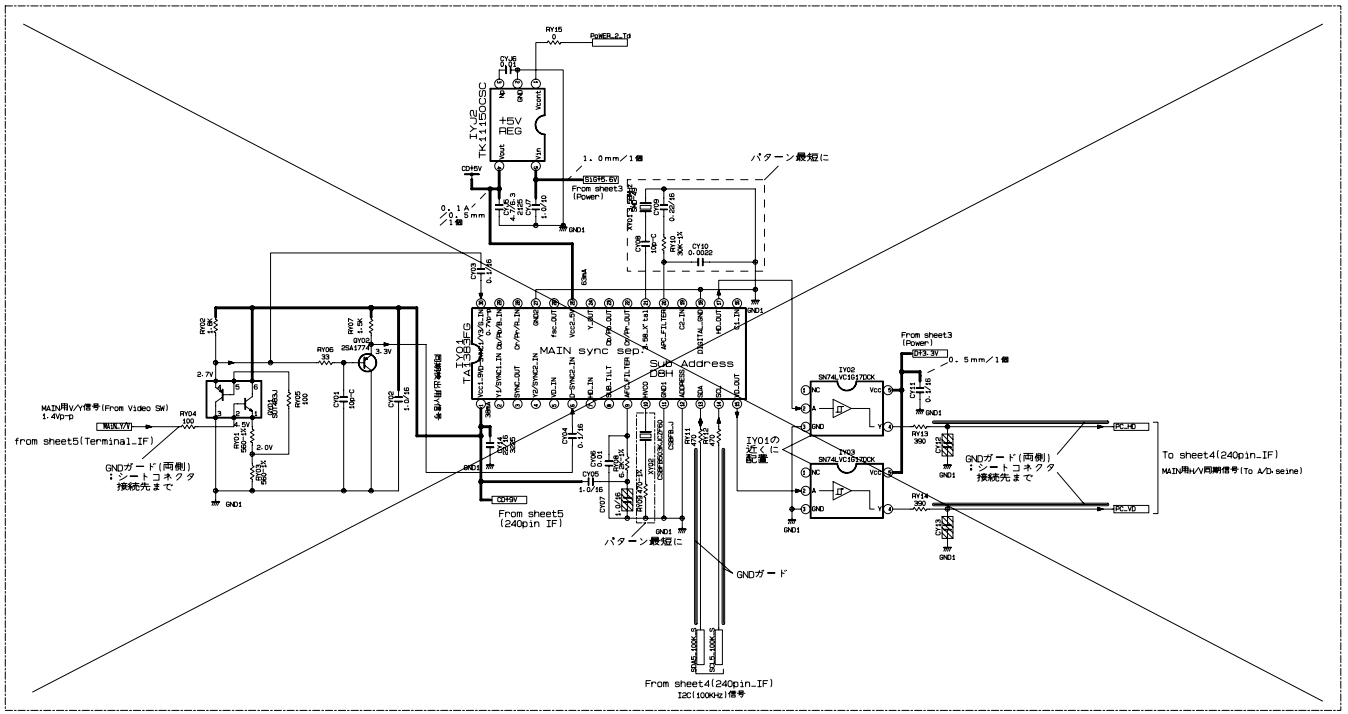


UEI

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

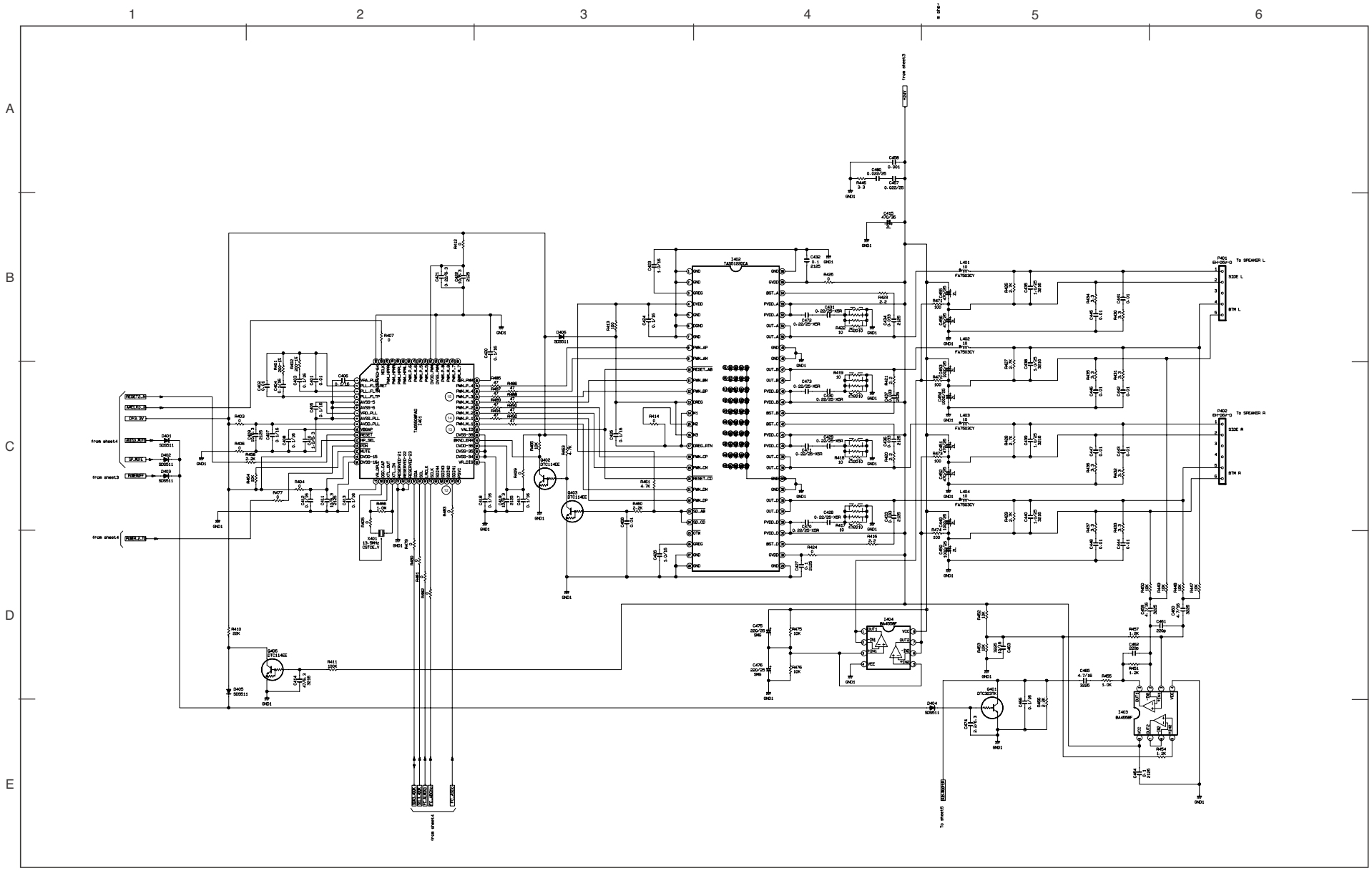


MAIN SYNC SEPARATION

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

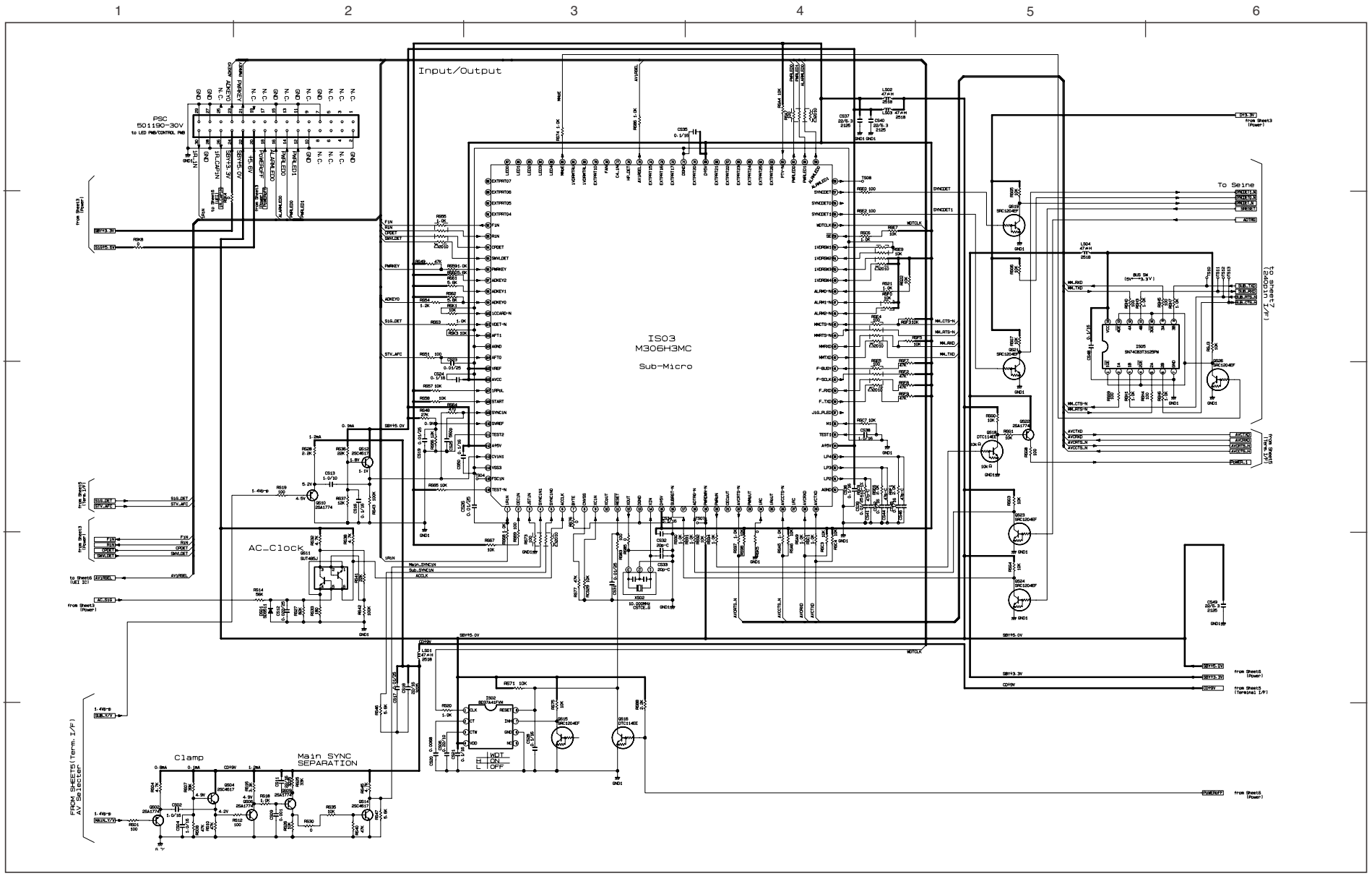
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

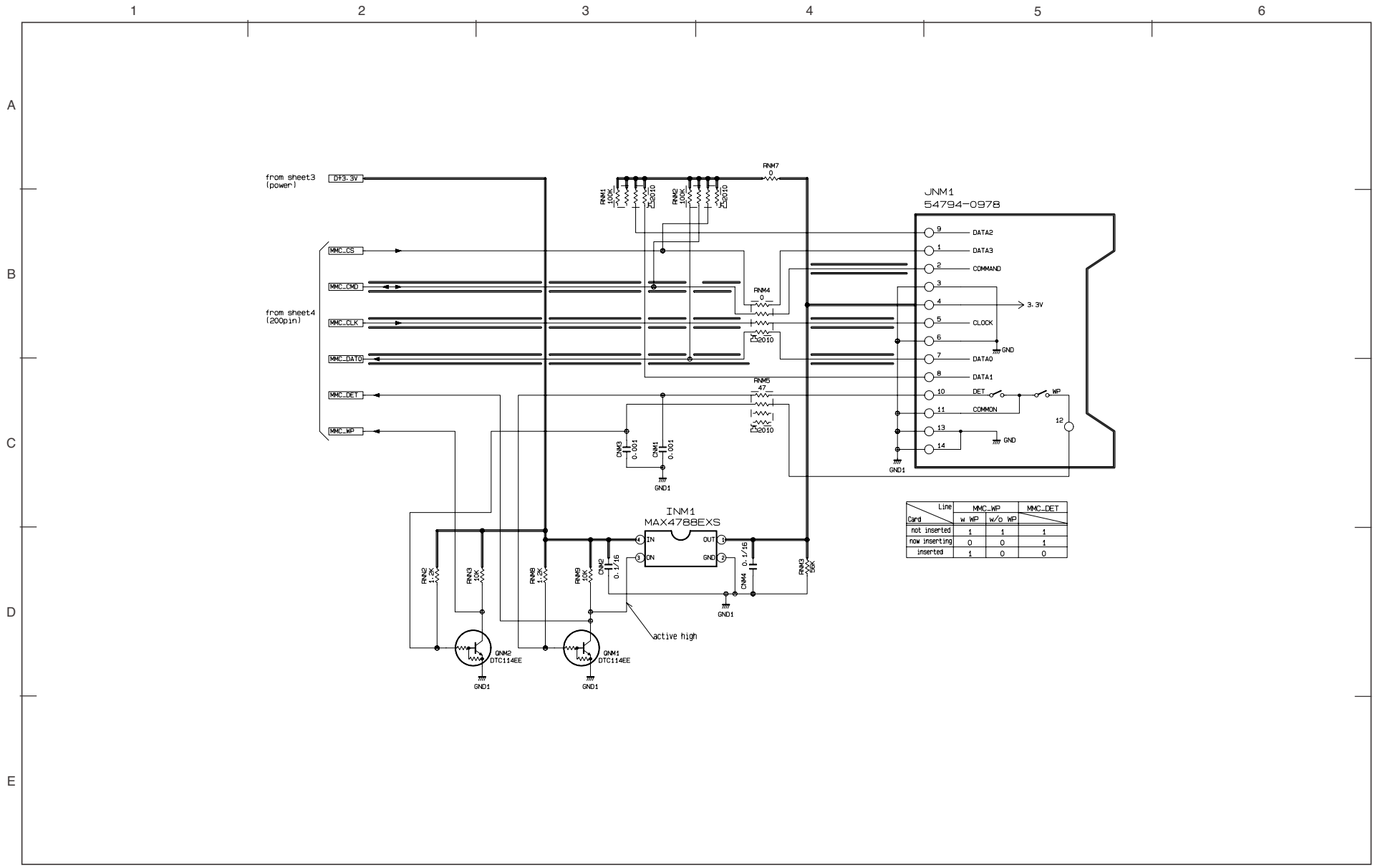


SUB-μ con

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



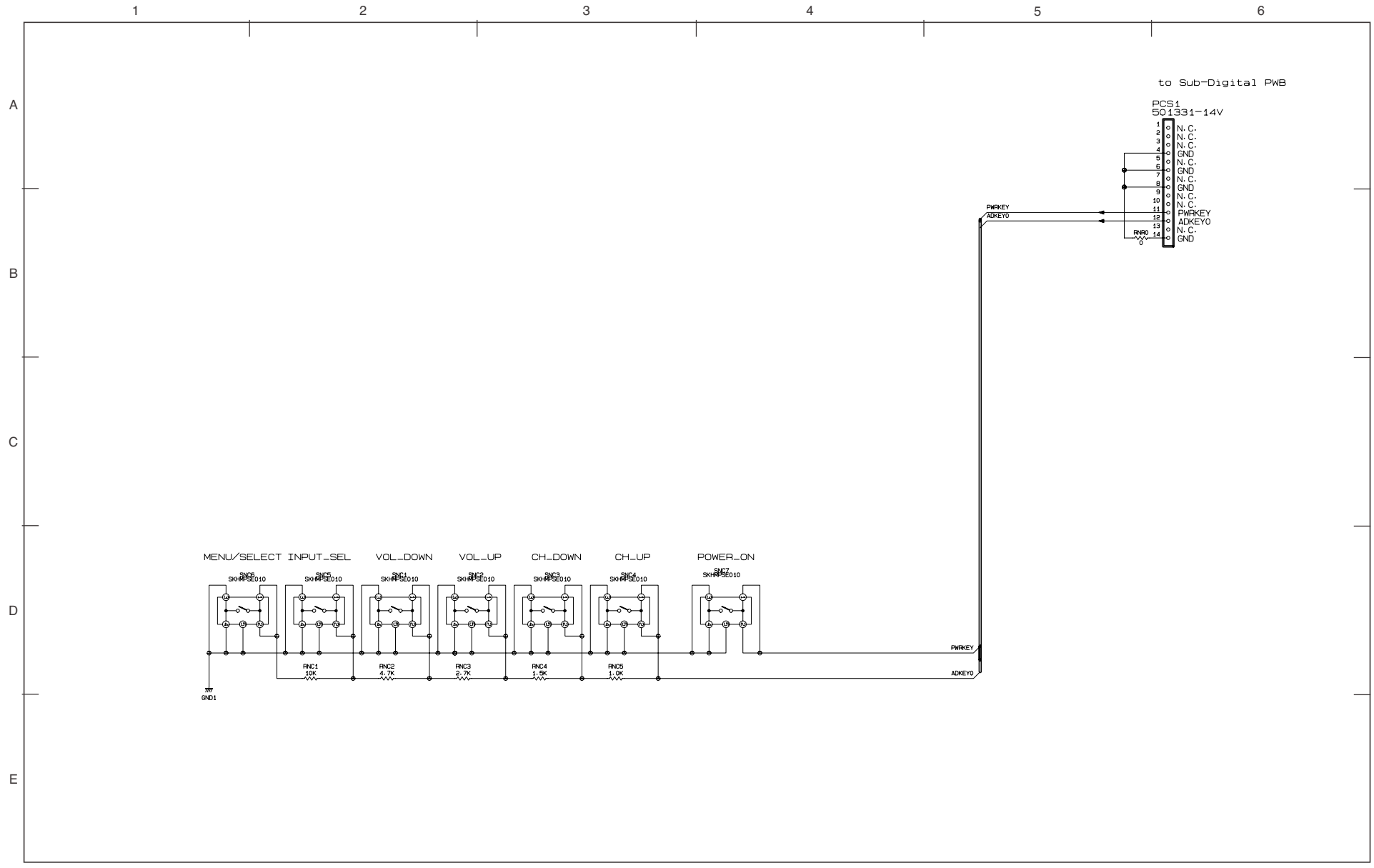
Line / Card	MMC_WP w WP	MMC_WP w/o WP	MMC_DET
not inserted	1	1	1
now inserting	0	0	1
inserted	1	0	0

SD CARD

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



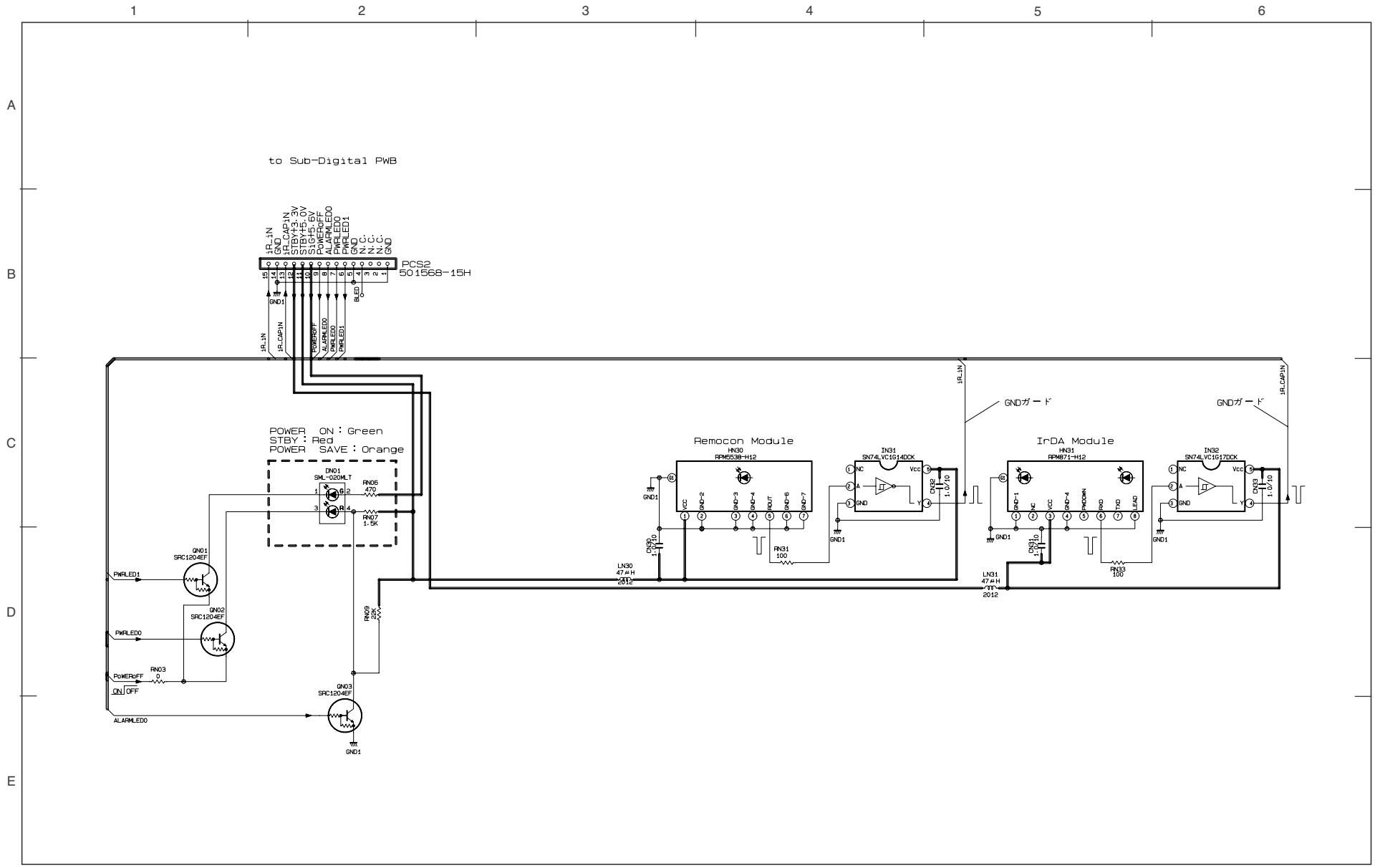
CONTROL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TABLE OF CONTENTS

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

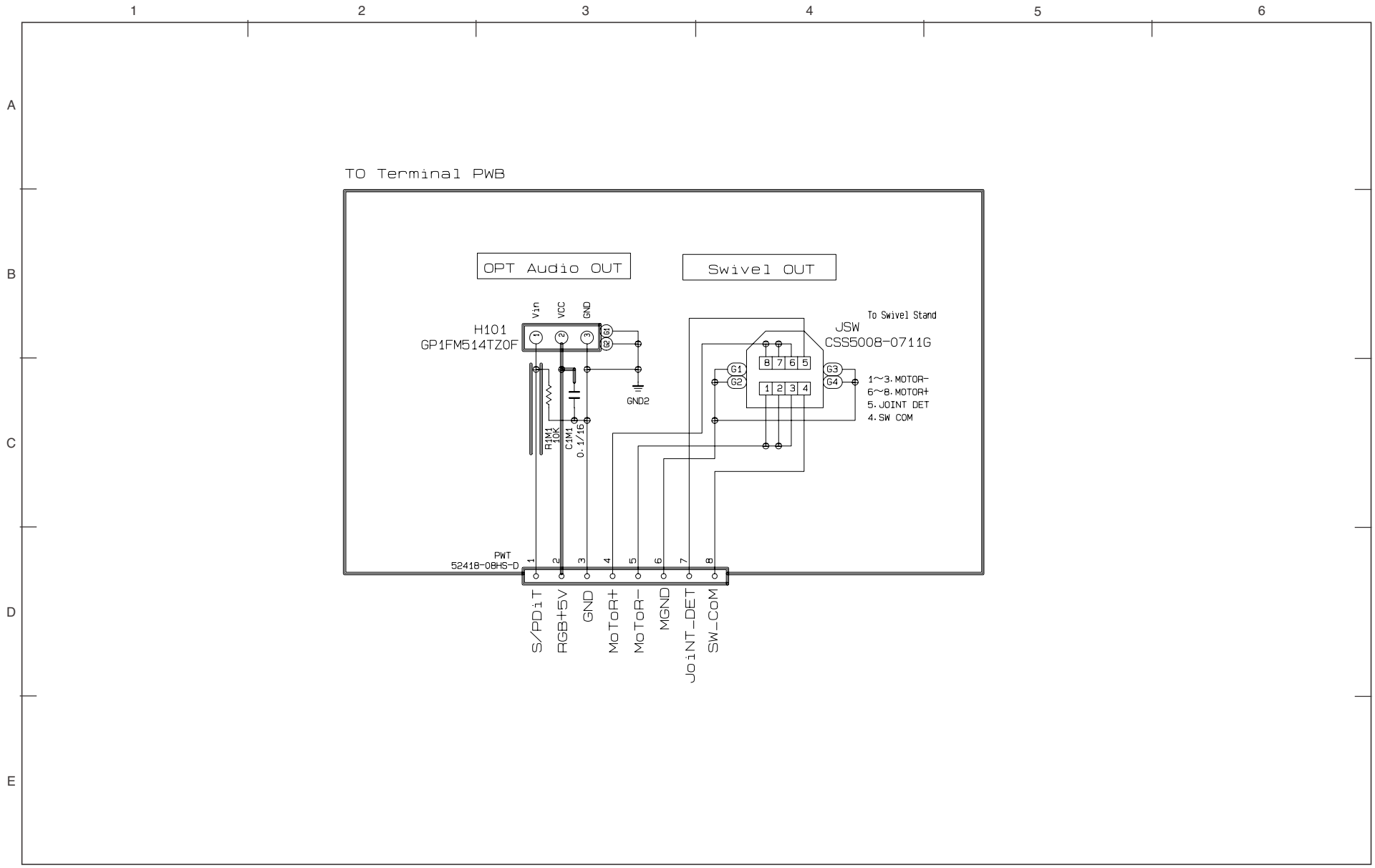


LED

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

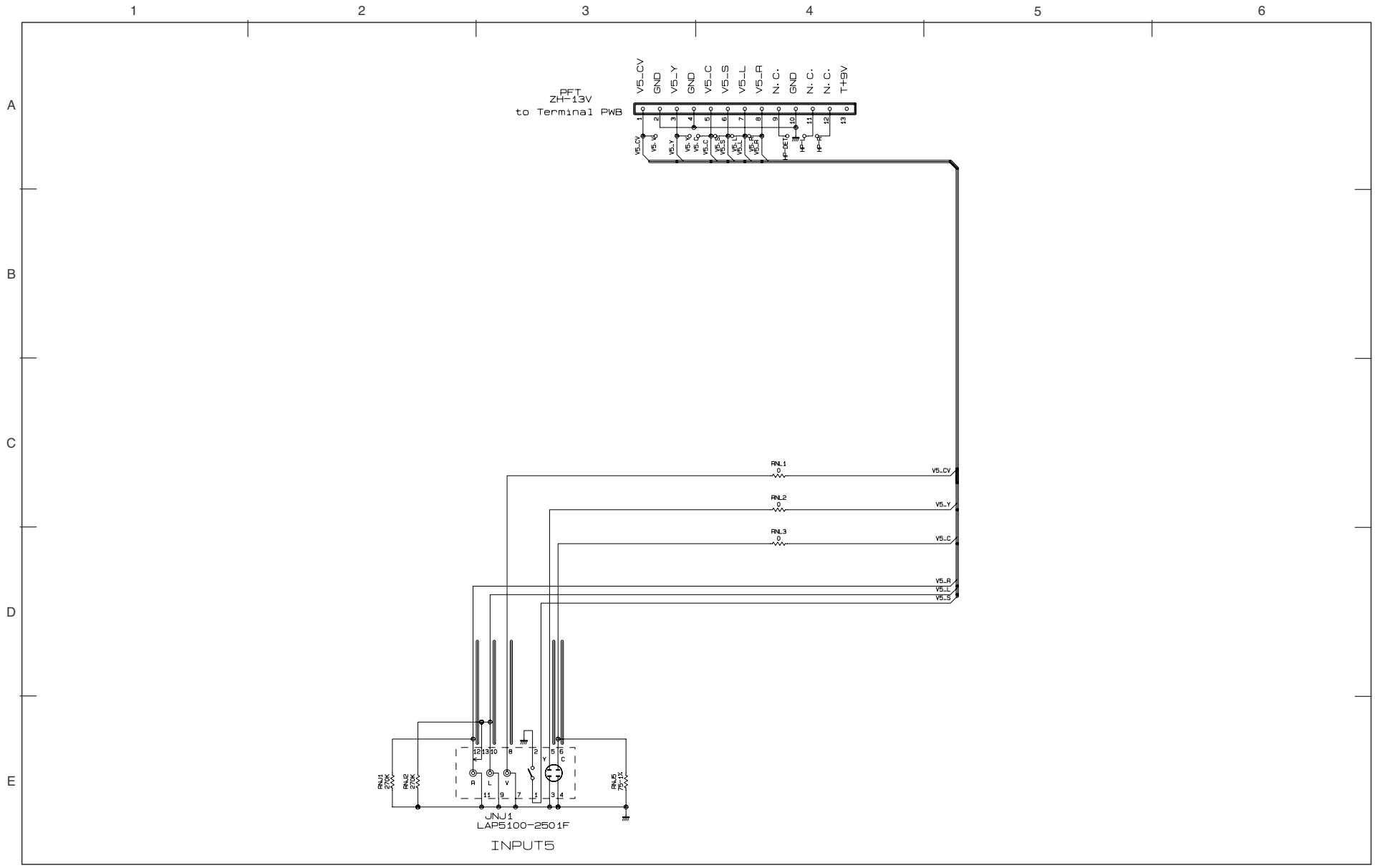


- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

OPT / SWIVEL

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

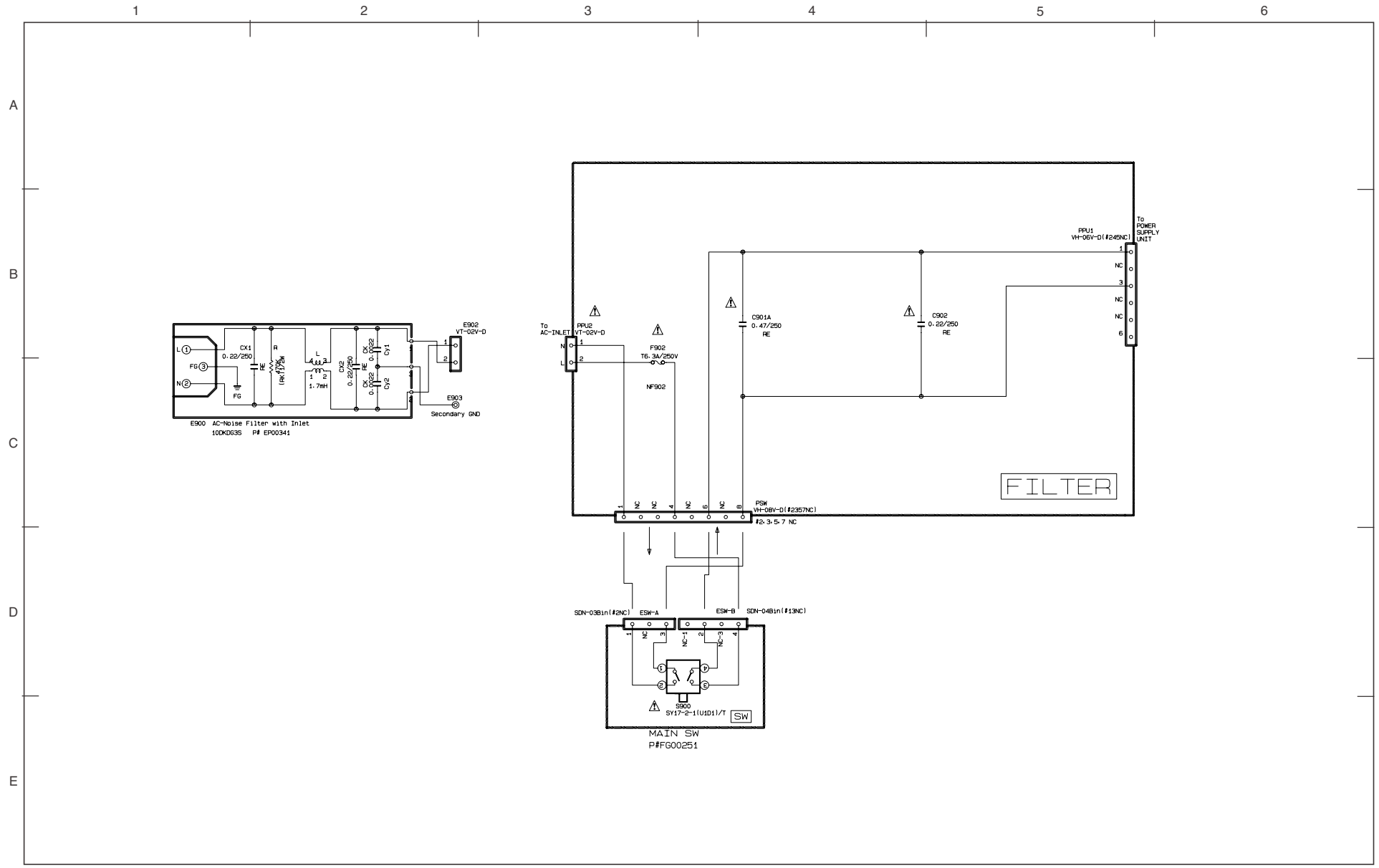


SIDE TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

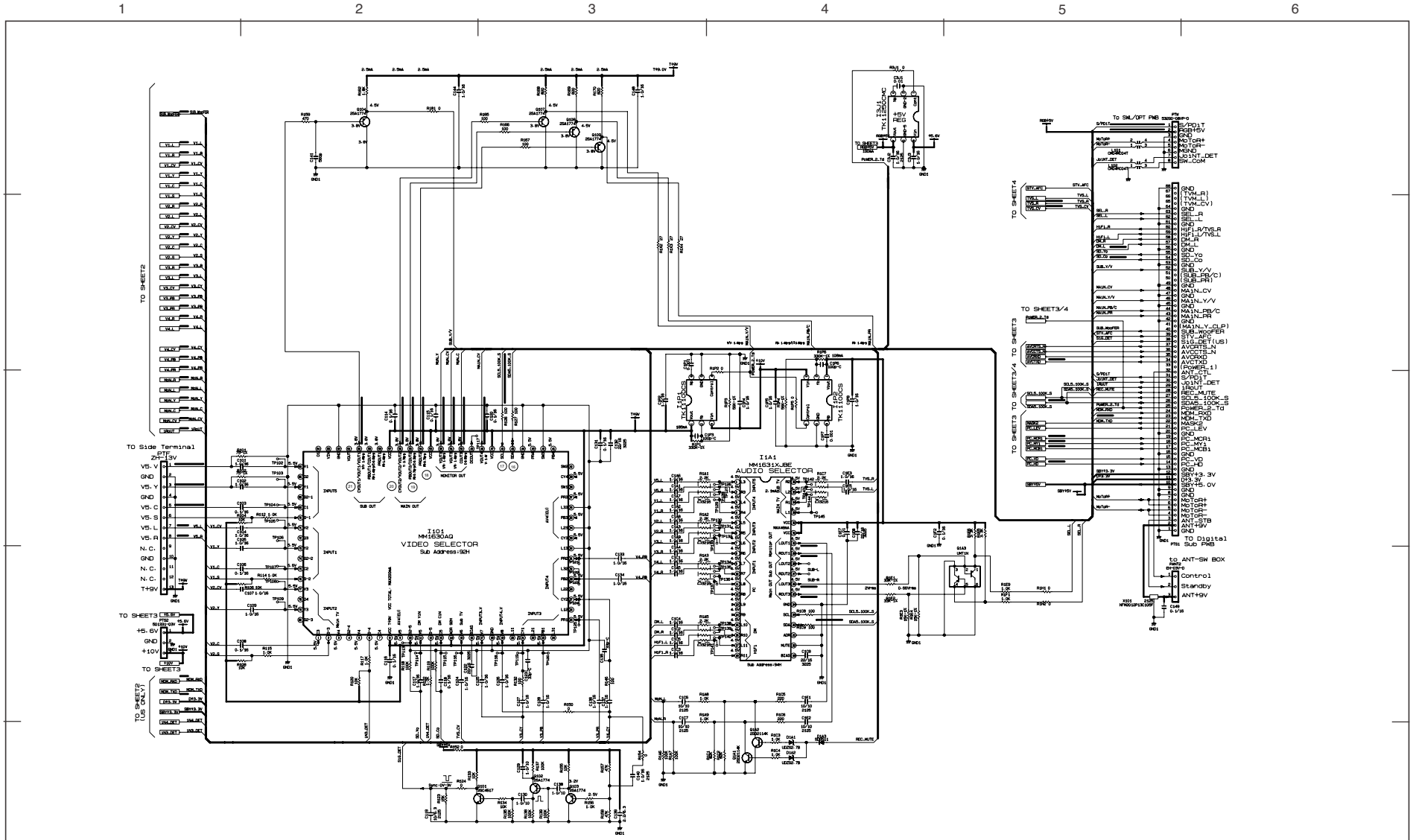


SW / FILTER

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

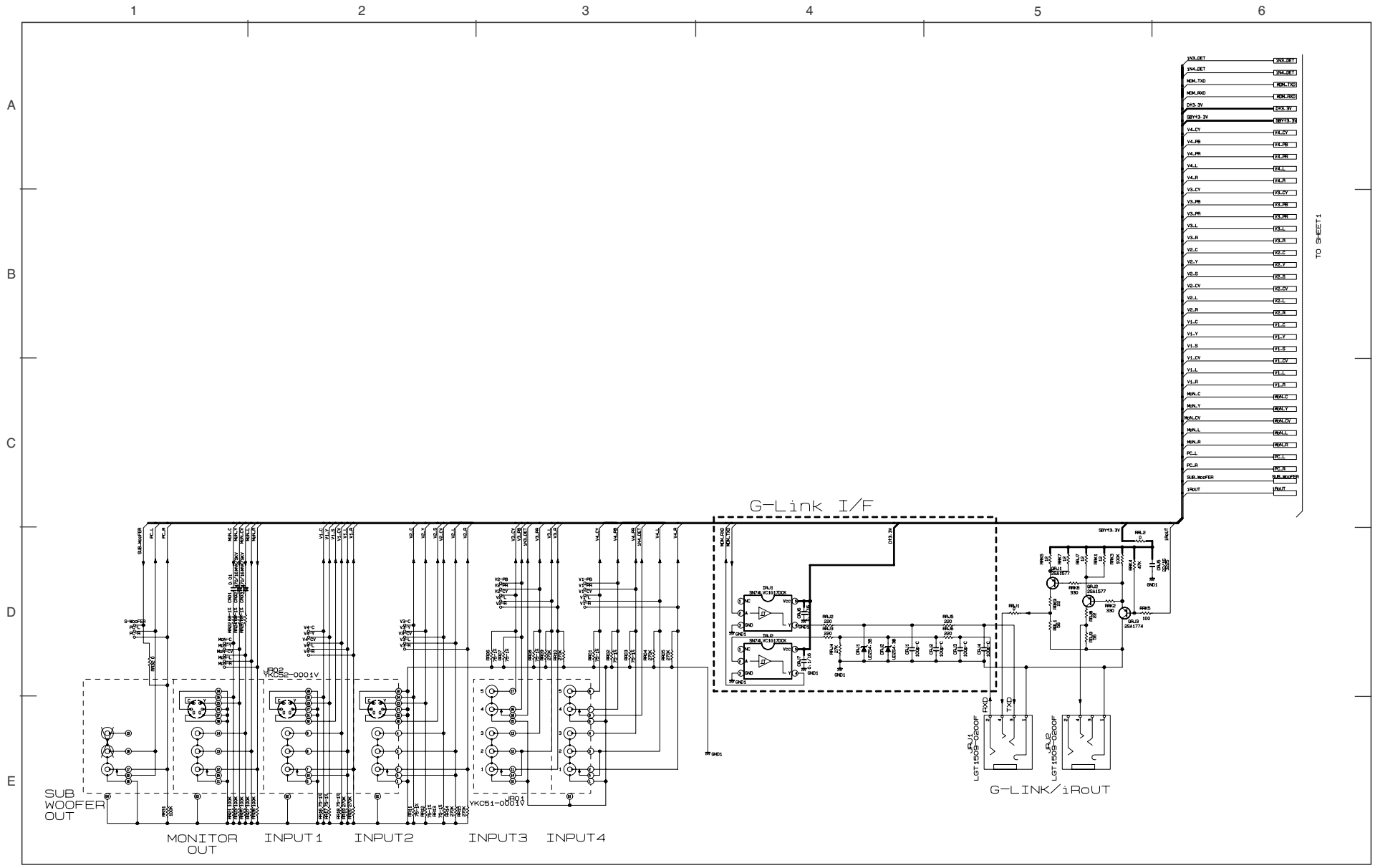


IF / SW / AMP

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

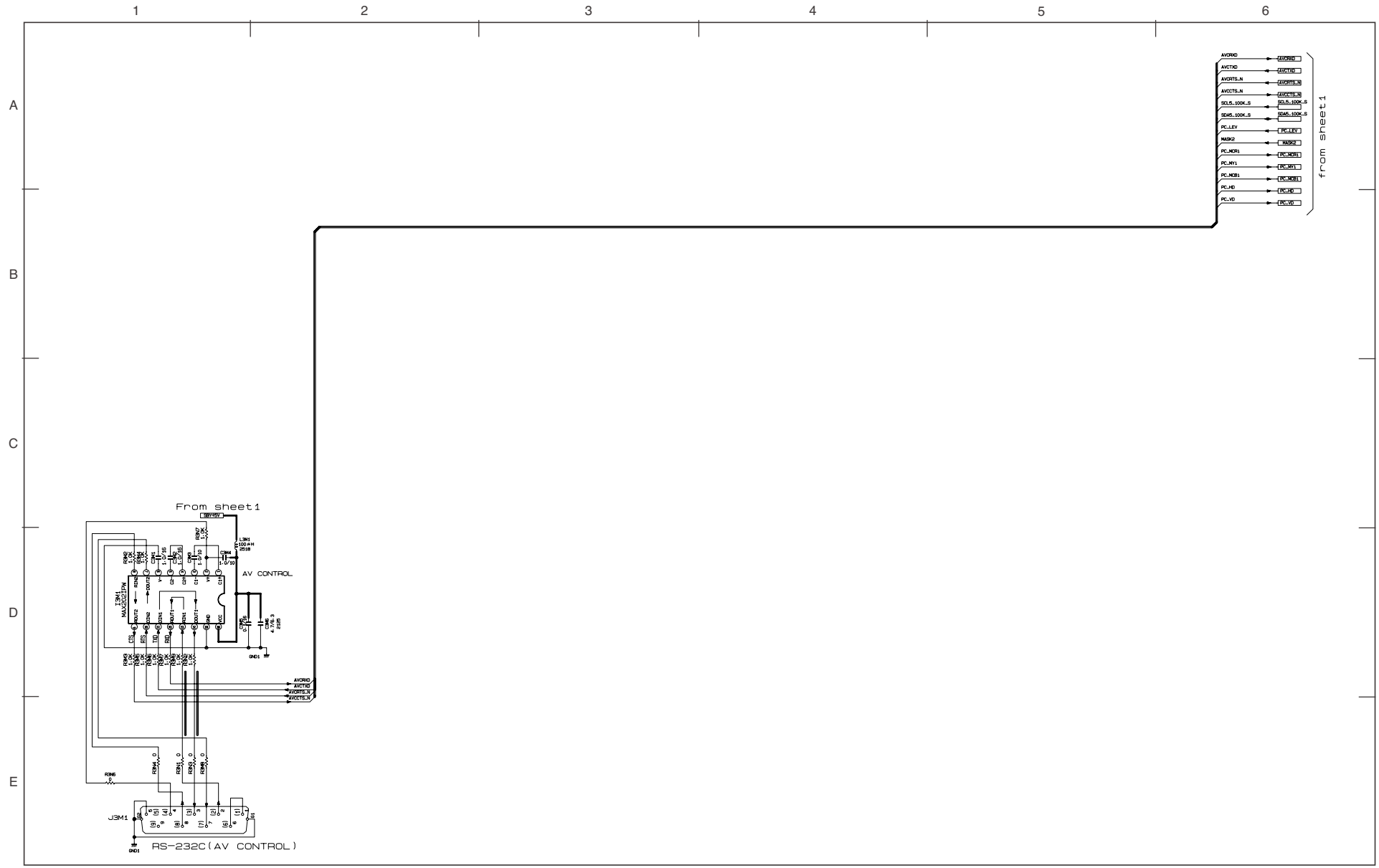
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

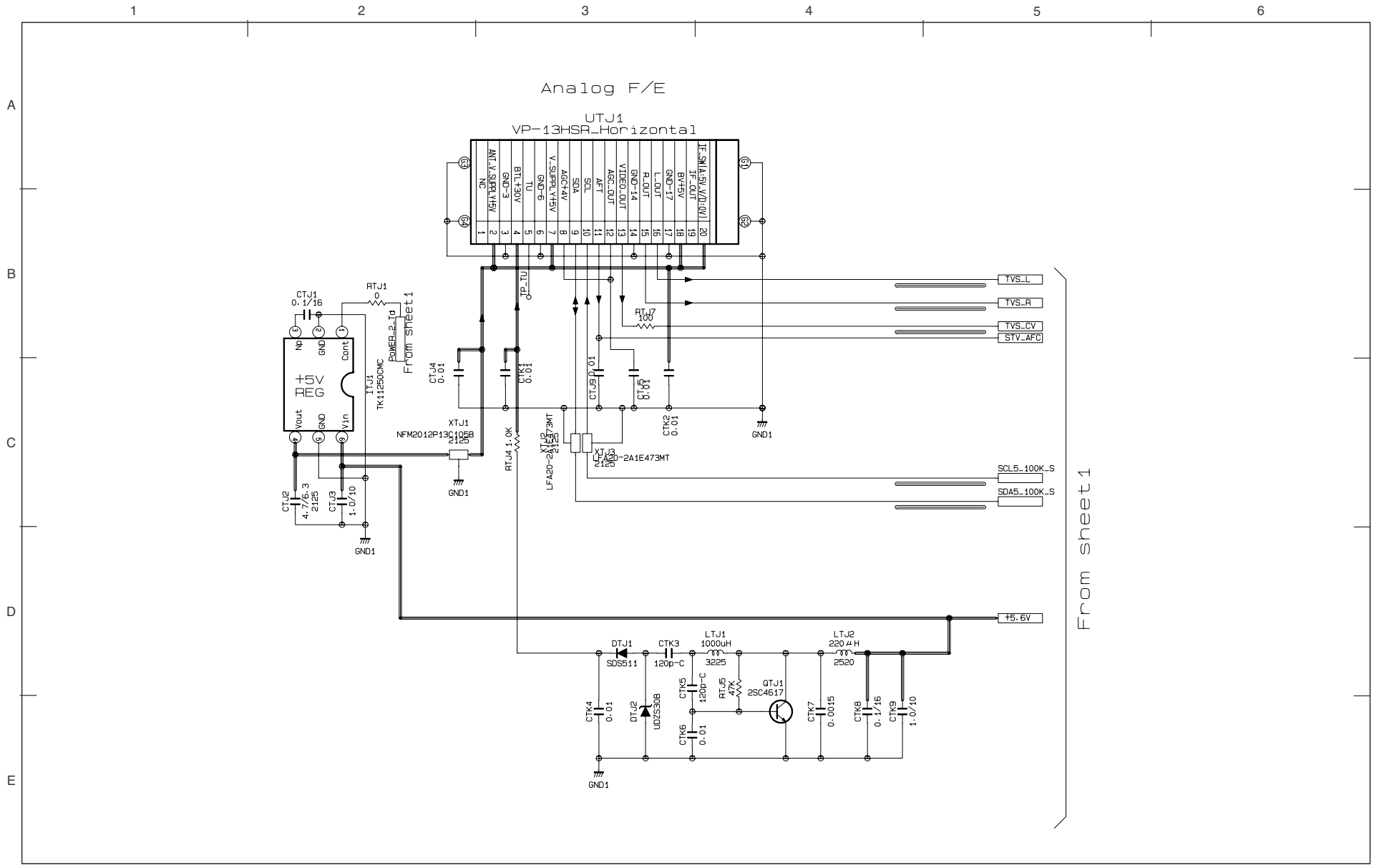
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

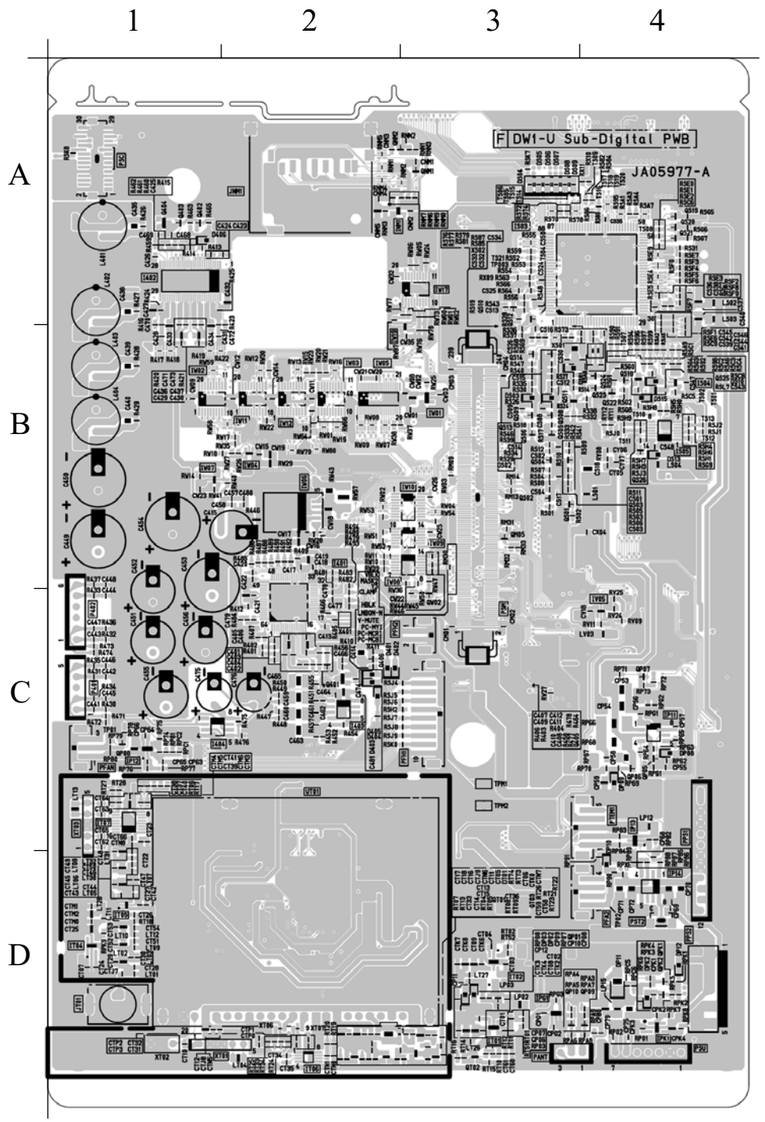


TUNER

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

PRINTED CIRCUIT BOARDS

DW1-U SUBDIGITAL PWB (Component side)



DW1-U SUBDIGITAL PWB SEMICONDUCTOR LOCATION
(Component side)

IC	
I401	C-2
I402	A-1
I403	C-2
I404	C-1
INM1	A-2
IP11	C-4
IP12	C-1
IP13	C-4
IP14	D-4
IPG1	D-3
IPK1	D-4
IS03	A-4
IS04	B-4
IS05	B-4
IT01	D-3
IT02	D-3
IT04	D-1
IT05	D-1
IT06	D-2
IT07	C-1
IV05	C-4
IW01	B-3
IW02	B-1
IW03	B-2
IW04	B-2
IW05	B-2
IW06	B-2
IW07	B-1
IW08	B-3
IW09	B-3
IW10	B-3
IW11	B-2
IW12	B-2
IW17	A-3
IW19	A-3

TRANSISTOR	
Q401	C-2
Q402	A-1
Q403	A-1
Q404	A-1
Q405	C-2
Q406	C-2
QM05	B-3
QNM1	A-3
QNM2	A-3
QP01	D-3
QP05	C-4
QP06	C-4
QP07	C-4
QPK2	D-4
QP08	C-1
QP09	D-4
QP10	D-3
QPK1	D-4
QPK2	D-4
QS01	B-3
QS02	B-3
QS03	B-3
QS04	B-3
QS05	B-3
QS06	B-3
QS08	B-3
QS09	B-3
QS10	A-3
QS11	B-3
QS12	A-3
QS13	B-3
QS14	B-3
QS18	B-4
QS19	A-4
QS20	A-4
QS21	A-4
QS22	B-4
QS23	B-4
QS24	B-4
QS25	B-4
QS26	B-4
QT01	D-2
QT02	D-3
QT03	D-3
QW02	B-3

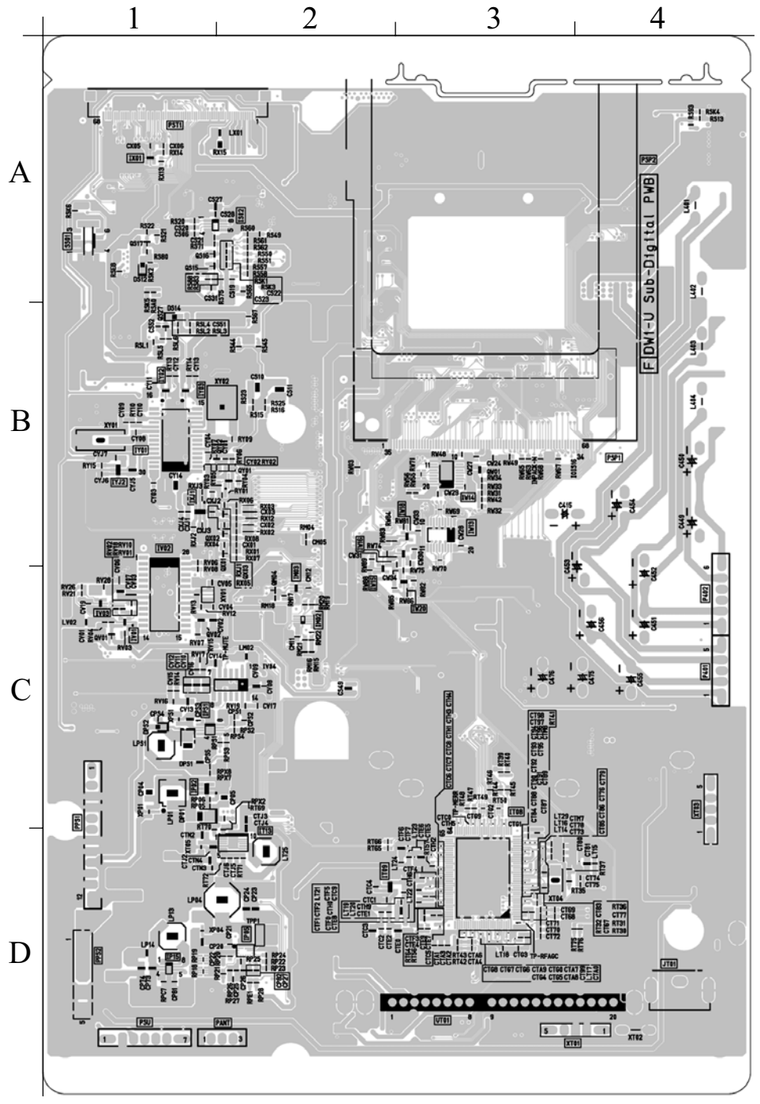
DIODE	
D401	C-2
D402	C-2
D403	C-2
D404	C-2
D405	C-2
D406	A-1
DP02	D-3
DP03	D-3
DP08	C-4
DP09	C-4
DP10	D-4
DP11	D-4
DP12	D-4
DPK2	D-4
DS01	B-3
DS02	B-3
DS03	B-3
DS04	A-3
DS05	A-3
DS06	A-3
DS07	A-3
DS08	A-3
DS09	A-3
DS10	B-4
DS13	B-4
DS15	B-4
DT01	D-3

CRYSTAL	
X401	C-2
XS01	B-4
XS02	B-4
XT01	D-1
XT02	D-1
XT03	C-1
XT06	D-2
XT07	D-2

BACK TO TABLE OF CONTENTS

PRINTED CIRCUIT BOARDS

DW1-U SUBDIGITAL PWB (Solder side)



DW1-U SUBDIGITAL PWB SEMICONDUCTOR LOCATION
(Solder side)

IC	
IM02	C-2
IM03	C-2
IP02	C-1
IP05	D-2
IP15	D-1
IPS1	C-1
IS02	A-1
IT08	D-3
IT09	D-2
IT13	D-2
IV01	C-1
IV02	C-1
IV03	C-1
IV04	C-2
IW13	B-3
IW14	B-3
IW15	B-2
IW16	B-3
IW18	B-3
IW20	C-3
IX01	A-1
IXJ1	B-1
IY01	B-1
IY02	B-1
IY03	B-1
IYJ2	B-1

TRANSISTOR	
QM04	C-2
QS15	A-1
QS16	A-1
QS17	A-1
QS27	B-1
QV01	C-1
QV02	C-1
QW01	B-3
QX01	B-2
QX02	B-2
QX03	B-2
QY01	B-2
QY02	B-1

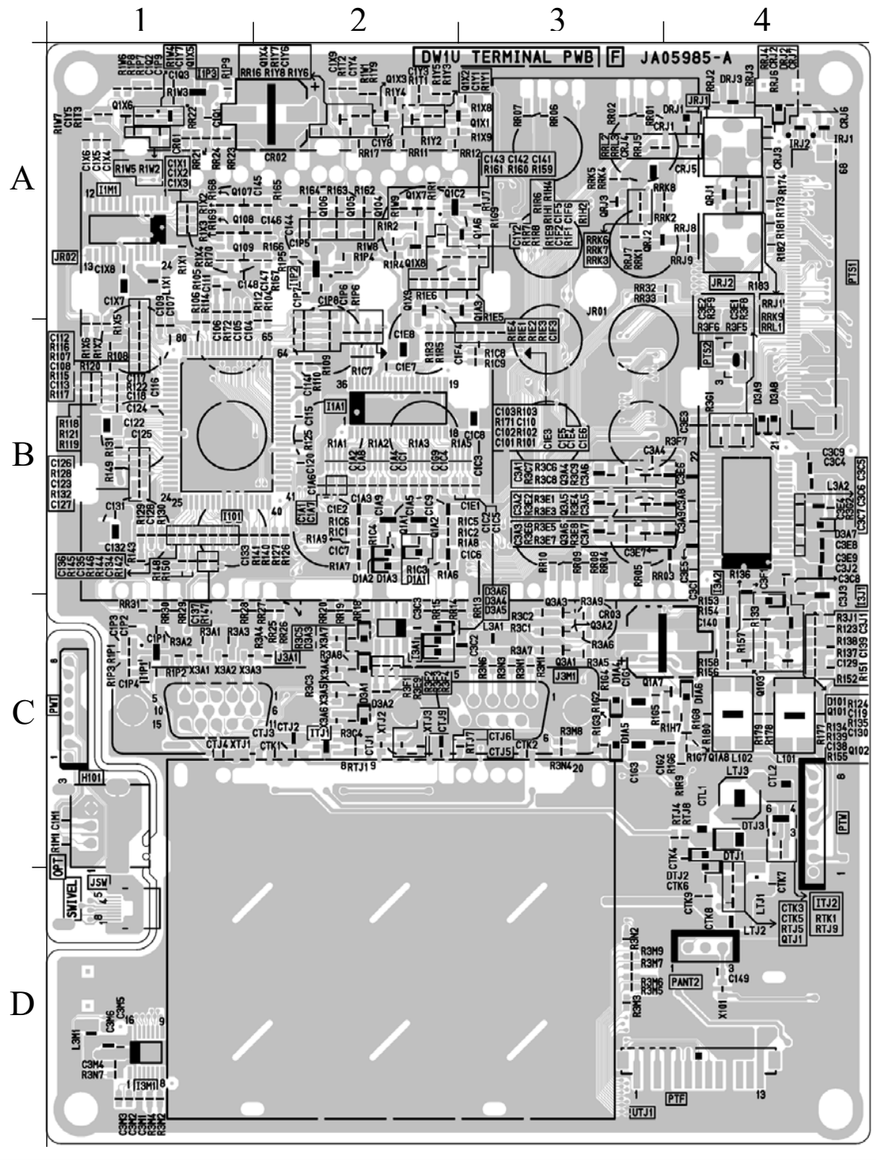
DIODE	
DP01	C-1
DPS1	C-1
DPS2	C-1
DS12	A-1
DS14	B-1

CRYSTAL	
XP01	C-1
XP04	D-1
XPS1	C-1
XT04	D-3
XT05	D-1
XV01	C-1
XY01	B-1
XY02	B-2

BACK TO TABLE OF CONTENTS

PRINTED CIRCUIT BOARDS

DW1-U TERMINAL PWB (Component side)



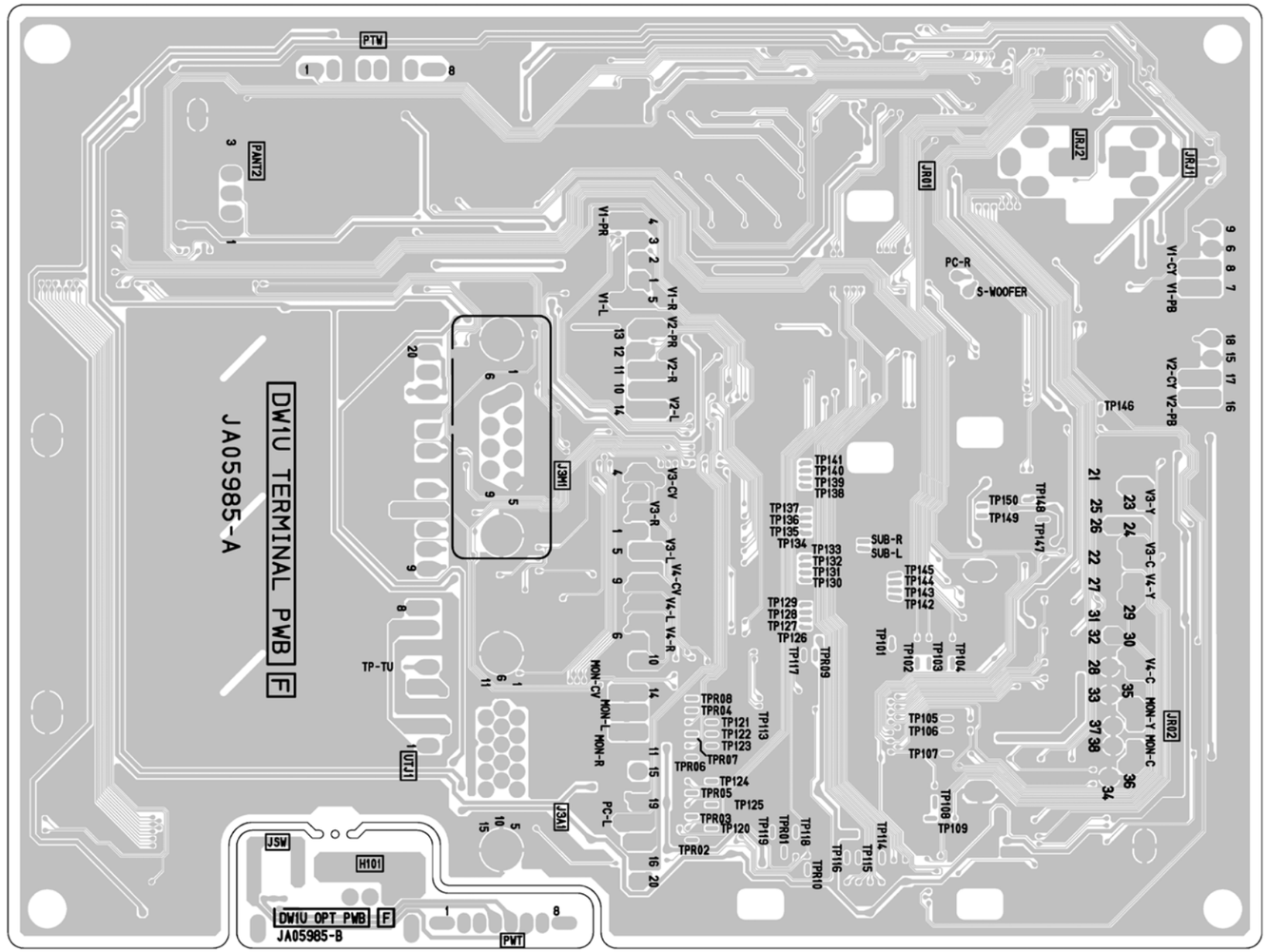
DW1-U TERMINAL PWB SEMICONDUCTOR LOCATION
(Component side)

IC	
I101	B-1
I1A1	B-2
I1M1	A-1
I1P1	C-1
I1P2	A-2
I1P3	A-1
I3A1	C-2
I3A2	B-4
I3J1	C-4
I3M1	D-1
IRJ1	A-4
IRJ2	A-4
ITJ1	C-2
ITJ2	C-4
TRANSISTOR	
Q101	C-4
Q102	C-4
Q103	C-4
Q104	A-2
Q105	A-2
Q106	A-2
Q107	A-1
Q108	A-1
Q109	A-1
Q1A1	B-2
Q1A2	B-2
Q1A3	A-3
Q1A6	A-3
Q1A7	C-4
Q1A8	C-4
Q1C2	A-2
Q1X1	A-2
Q1X2	A-2
Q1X3	A-2
Q1X4	A-2
Q1X5	A-1
Q1X6	A-1
Q1X7	A-2
Q1X8	A-2
Q1X9	A-2
Q3A1	C-3
Q3A2	C-3
Q3A3	C-3
Q3A4	B-3
Q3A5	B-3
Q3A6	B-3
QRJ1	A-4
QRJ2	A-3
QRJ3	A-3
QTJ1	D-4
DIODE	
D101	C-4
D1A1	B-2
D1A2	B-2
D1A3	B-2
D1A4	C-3
D1A5	C-3
D1A6	C-4
D3A1	C-2
D3A2	C-2
D3A3	C-2
D3A4	C-2
D3A5	C-2
D3A6	C-2
D3A7	B-4
D3A8	B-4
D3A9	B-4
DRJ1	A-4
DRJ2	A-4
DRJ3	A-4
DTJ1	C-4
DTJ2	C-4
DTJ3	C-4
CRYSTAL & FILTER	
X101	D-4
X3A1	C-1
X3A2	C-1
X3A3	C-1
X3A4	C-2
X3A5	C-2
X3A6	C-2
X3A7	C-2
XTJ1	C-1
XTJ2	C-2
XTJ3	C-2

BACK TO TABLE OF CONTENTS

PRINTED CIRCUIT BOARDS

DW1-U TERMINAL PWB (Solder side)

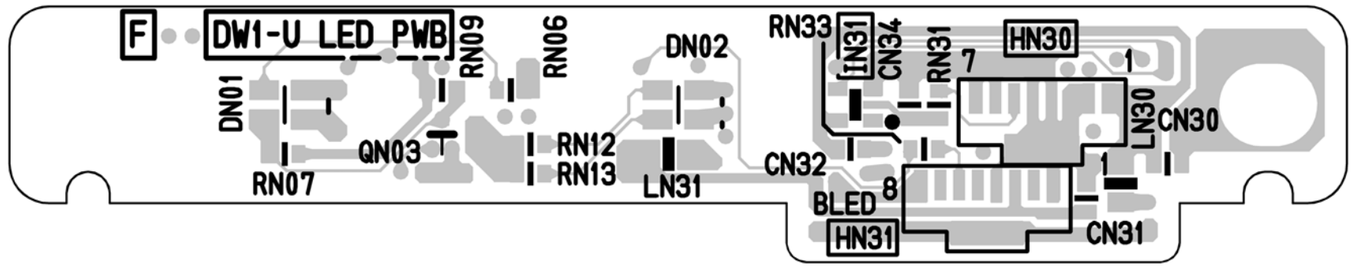


BACK TO TABLE OF CONTENTS

PRINTED CIRCUIT BOARDS

DW1-U LED PWB

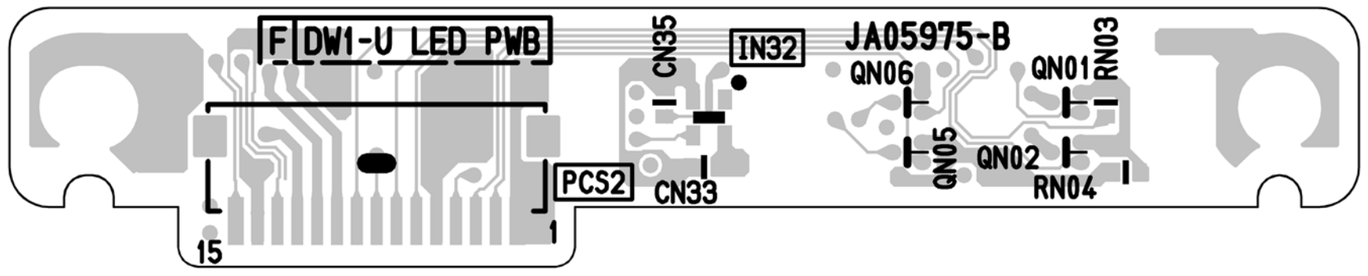
(Component side)



Component side

IC	DIODE
IN31	DN01 DN02 HN30 HN31
TRANSISTOR	
QN03	

(Solder side)



Solder side

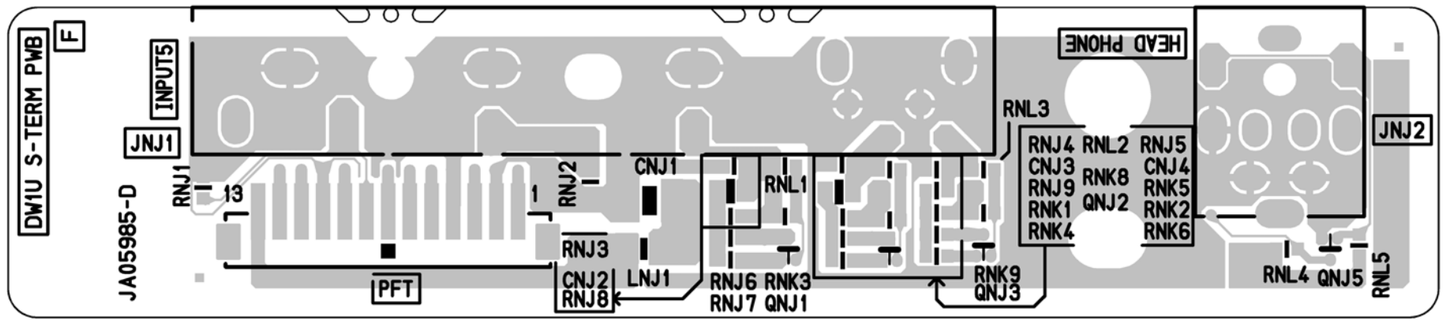
IC
IN32
TRANSISTOR
QN01 QN02 QN05 QN06

BACK TO TABLE OF CONTENTS

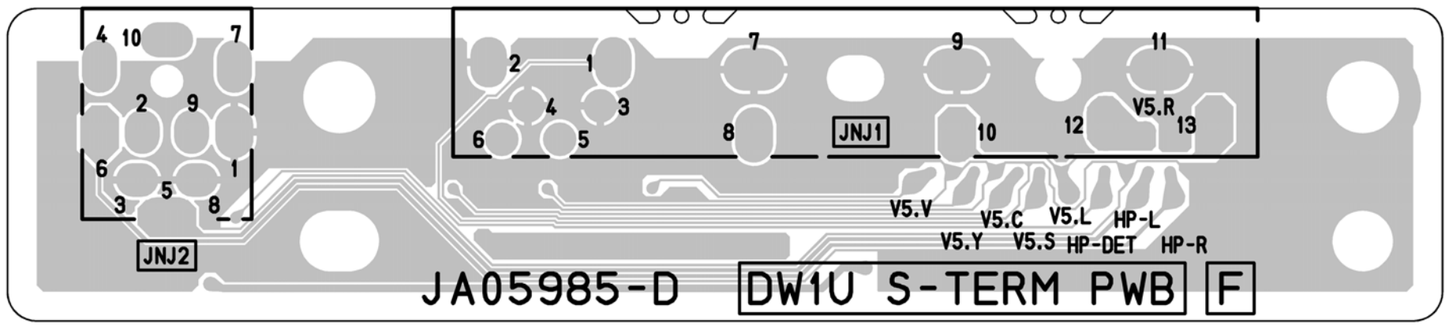
PRINTED CIRCUIT BOARDS

DW1-U SIDE TERMINALPWB

(Component side)



(Solder side)



Component side

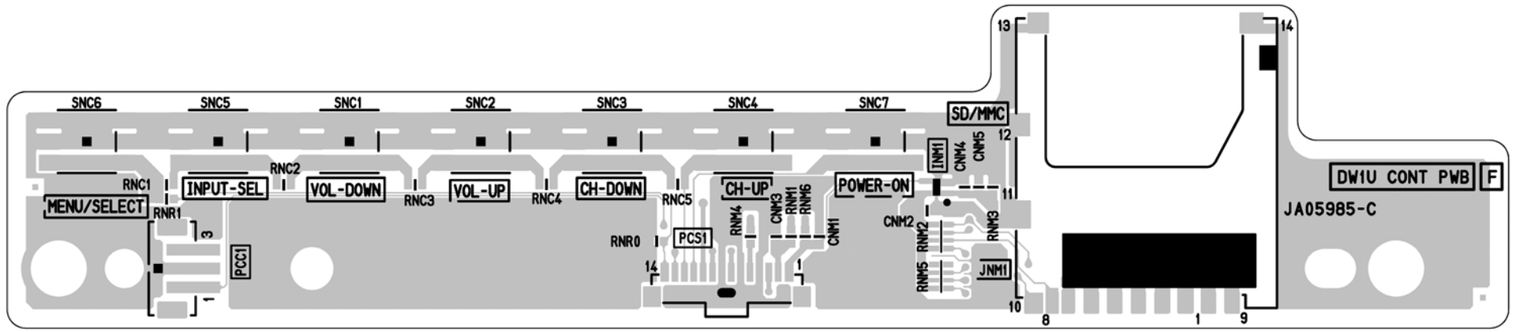
TRANSISTOR
QNJ1
QNJ2
QNJ3
QNJ5

BACK TO TABLE OF CONTENTS

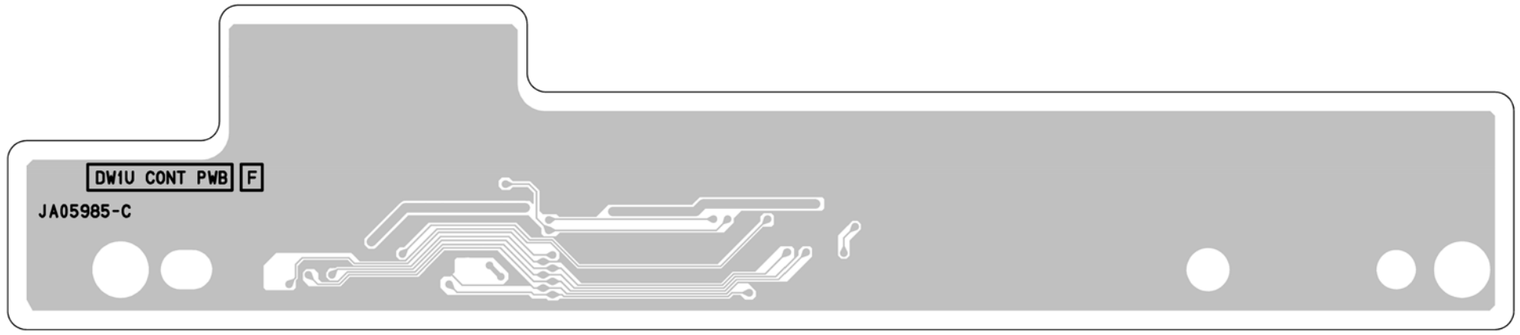
PRINTED CIRCUIT BOARDS

DW1-U CONTROLPWB

(Component side)



(Solder side)



Component side

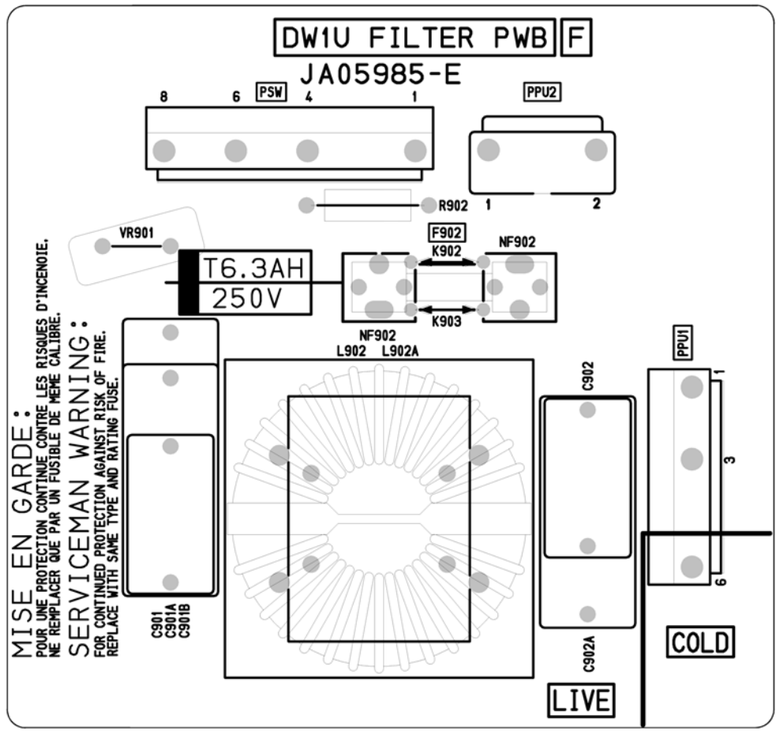
IC
INM1

BACK TO TABLE OF CONTENTS

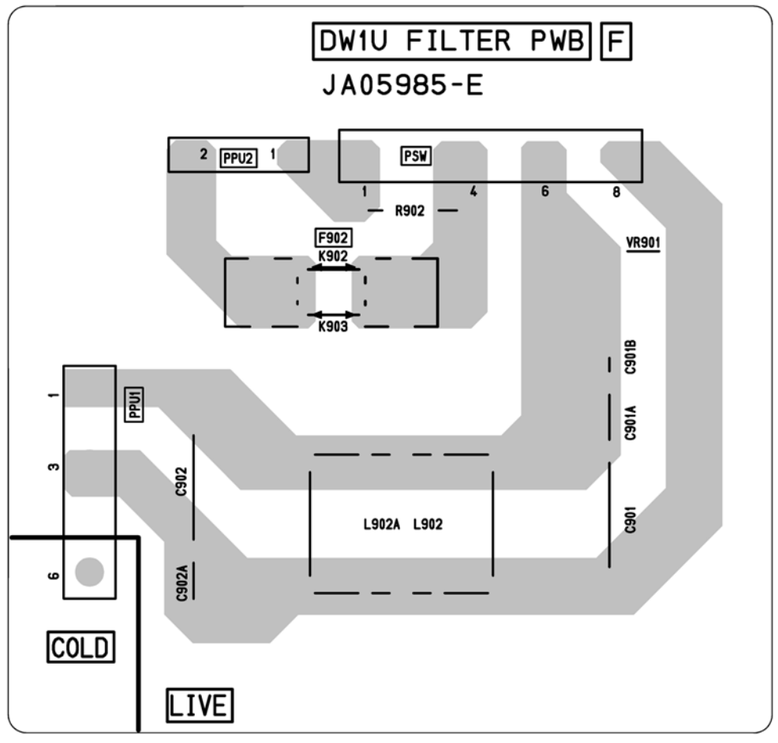
PRINTED CIRCUIT BOARDS

DW1-U FILTER PWB

(Component side)



(Solder side)

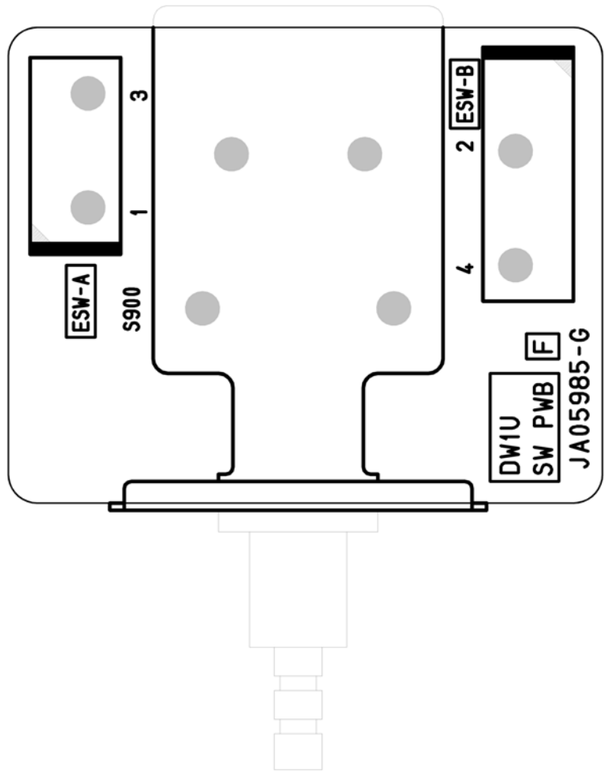


BACK TO TABLE OF CONTENTS

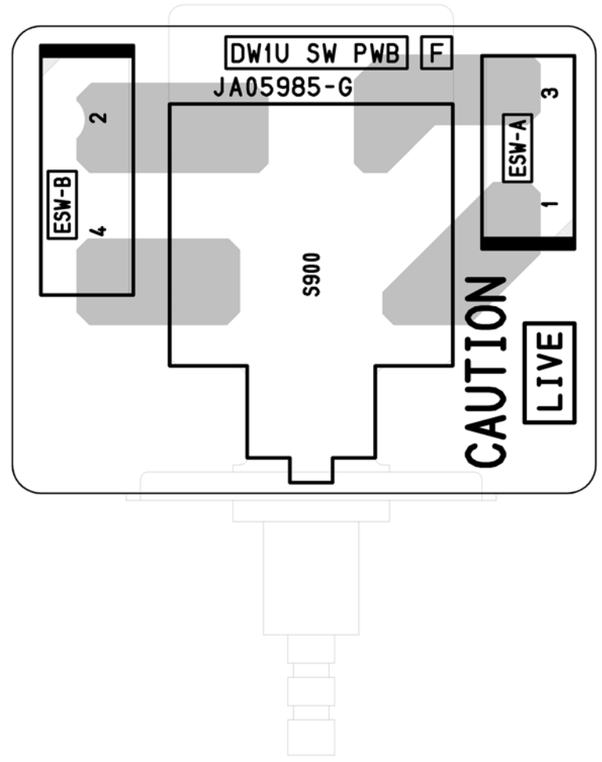
PRINTED CIRCUIT BOARDS

DW1-U SWITCH PWB

(Component side)



(Solder side)

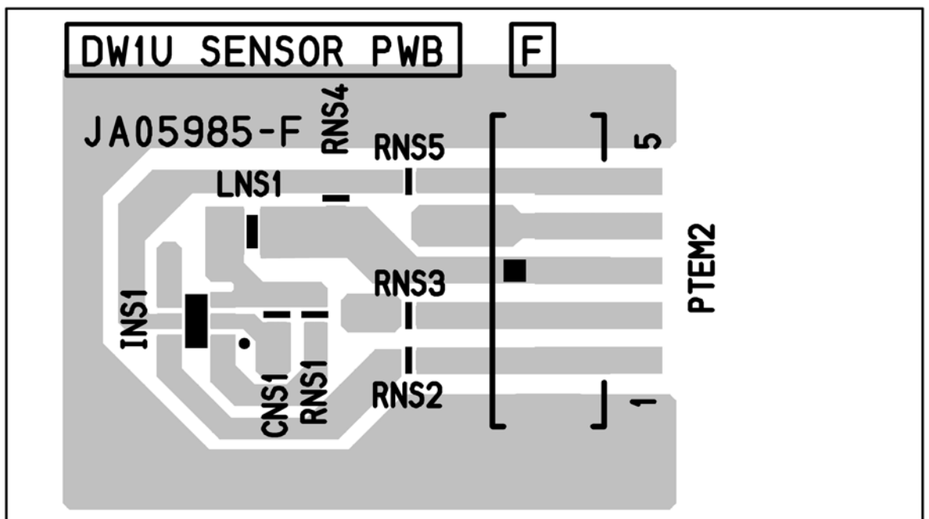


BACK TO TABLE OF CONTENTS

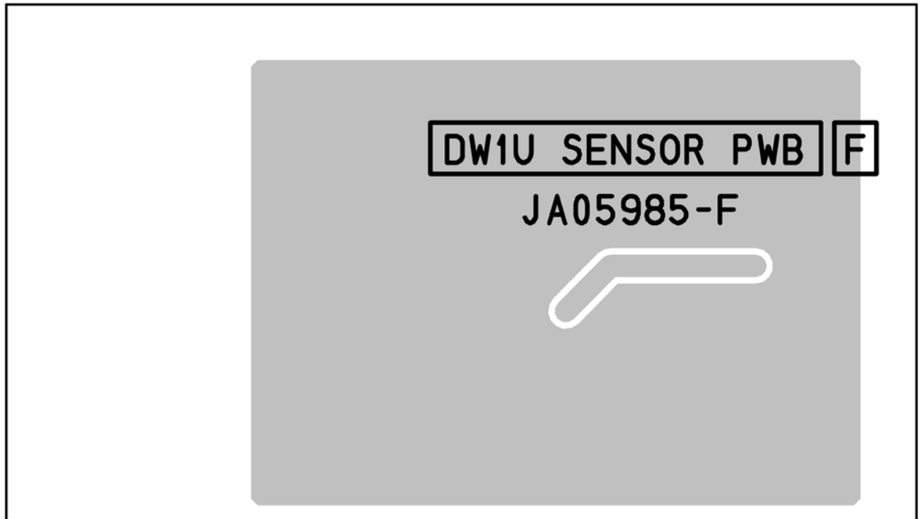
PRINTED CIRCUIT BOARDS

DW1-U SWITCH PWB

(Component side)



(Solder side)



Component side

IC
INS1

BACK TO TABLE OF CONTENTS

REPLACEMENT PARTS LIST

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS

Capacitors:
- AL: Aluminum Electrolytic
- CD: Ceramic Disc
- EL: Electrolitic
- PF: Polyester Film
- PP: Polypropylene
- PL: Plastic
- TA: Tantalum
- PR: Paper
- TM: Trimmer
- MC: Mylar

Resistors:
- CF: Carbon Film
- CC: Carbon Composition
- MF: Metal Oxide
- VR: Variable Resistor
- WW: Wire Wound
- FR: Fuse Resistor
- MG: Metal Grazed

Semiconductors:
- TR: Transistor
- DI: Diode
- ZD: Zener Diode
- VA: Varistor
- TH: Termistor
- IC: Integrated Circuit

SYMBOL	PART No.	DESCRIPTION	SYMBOL	PART No.	DESCRIPTION
			C438	AA00716R	CHIP-CERAMIC 1.0UF-25V-B-3216
		SUBDIGITAL PWB	C439	AA00716R	CHIP-CERAMIC 1.0UF-25V-B-3216
			C440	AA00716R	CHIP-CERAMIC 1.0UF-25V-B-3216
		CAPACITORS	C441	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C401	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	C442	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C402	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	C443	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C403	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C444	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C404	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C445	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C405	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C446	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C406	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C447	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C407	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C448	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C408	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C449	AL01858R	1000UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C409	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	C450	AL01858R	1000UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C410	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	C451	AL01857R	470UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C411	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	C452	AL01857R	470UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C412	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C453	AL01858R	1000UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C413	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C454	AL01858R	1000UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C414	AA00754R	CAP.CHIP3216-B-47UF6.3V	C455	AL01857R	470UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C415	AL01865R	470UF 35V ALUMINIUM ELECTROLYTIC CAPACITOR	C456	AL01857R	470UF 25V ALUMINIUM ELECTROLYTIC CAPACITOR
C417	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C457	0893197R	CAP 1608CHIP 22000PFKB 25V TAPE
C418	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C458	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
C419	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	C459	AA00421R	CERAMIC CAPACITOR(10UF 16V)
C420	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C460	AA00421R	CERAMIC CAPACITOR(10UF 16V)
C421	AA01132R	CERAMIC CAPACITOR(0.22UF 6.3V)	C461	0893199R	CAP 1608CHIP 220PFKB 50V TAPE
C422	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	C462	0893199R	CAP 1608CHIP 220PFKB 50V TAPE
C423	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C463	AA00422R	CERAMIC CAPACITOR(10UF 16V)
C424	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C464	AA00991R	CERAMIC CAPACITOR(0.1UF 50V-B)
C425	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	C465	AA00421R	CERAMIC CAPACITOR(10UF 16V)
C426	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C466	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
C427	AA00991R	CERAMIC CAPACITOR(0.1UF 50V-B)	C468	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C428	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2	C470	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2
C429	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2	C471	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2
C430	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2	C472	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2
C431	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2	C473	AA01348R	CERAMIC CAP. 1608-X5R 0.22UF 2
C432	AA00991R	CERAMIC CAPACITOR(0.1UF 50V-B)	C474	AA01113R	CCC225K06-B-16CT
C433	0893051R	CAP2125CHIP 33000PFKB 50V TAPE	C475	0800336R	CAP.-ELECTRO. 220UF-M(SMG) 25V
C434	0893051R	CAP2125CHIP 33000PFKB 50V TAPE	C476	0800336R	CAP.-ELECTRO. 220UF-M(SMG) 25V
C435	AA00716R	CHIP-CERAMIC 1.0UF-25V-B-3216	C477	0893115R	CAP 1608CHIP 15PFJCH 50V TAPE
C436	0893051R	CAP2125CHIP 33000PFKB 50V TAPE	C478	0893115R	CAP 1608CHIP 15PFJCH 50V TAPE
C437	0893051R	CAP2125CHIP 33000PFKB 50V TAPE	C480	0893197R	CAP 1608CHIP 22000PFKB 25V TAPE

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
C481	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CS33	0225037R	CAP 1608CHIP 20PFJCH 50V TAPE
CM01	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS34	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CM02	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS35	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CM03	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS36	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CM04	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS37	AA00969R	CAP.CHIP2125-B-22UF6.3V
CM05	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS38	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CM11	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS39	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE
CM12	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS40	AA00969R	CAP.CHIP2125-B-22UF6.3V
CN30	AA01123R	CCC105K10-B-16CT	CS41	0893122R	CAP 1608CHIP 47PFJCH 50V TAPE
CN31	AA01123R	CCC105K10-B-16CT	CS42	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CN32	AA01123R	CCC105K10-B-16CT	CS44	0893122R	CAP 1608CHIP 47PFJCH 50V TAPE
CN33	AA01123R	CCC105K10-B-16CT	CS45	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CNM1	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CS46	0893122R	CAP 1608CHIP 47PFJCH 50V TAPE
CNM2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS48	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CNM3	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CS49	AA00969R	CAP.CHIP2125-B-22UF6.3V
CNM4	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CS50	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CP06	AA01123R	CCC105K10-B-16CT	CT01	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CP07	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT02	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)
CP08	0893211R	CAP 1608CHIP 1500PFKB 50V TAPE	CT03	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CP09	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE	CT04	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)
CP10	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT05	AA01173R	CCC1R0K50-B-32CT 1UF/50V-B-3225
CP11	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE	CT06	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP12	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CT07	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CP20	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	CT08	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP21	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT09	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP22	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT10	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CP23	AA00969R	CAP.CHIP2125-B-22UF6.3V	CT11	AA01802R	CCC103K50-B-16CT MCH18
CP24	AA00969R	CAP.CHIP2125-B-22UF6.3V	CT12	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP25	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	CT13	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
CP26	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CT14	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CP27	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT15	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CP53	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32	CT16	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP54	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32	CT17	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP55	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT22	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CP56	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CT23	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
CP57	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CT24	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)
CP58	AA00699R	CAP.CHIP-CERAMIC 10UFK 16V B 3	CT25	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP59	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CT26	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CP63	AA01123R	CCC105K10-B-16CT	CT27	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CP64	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT28	0893123R	CAP 1608CHIP 56PFJCH 50V TAPE
CP65	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	CT29	0893124R	CAP 1608CHIP 68PFJCH 50V TAPE
CP66	AA00969R	CAP.CHIP2125-B-22UF6.3V	CT30	0893115R	CAP 1608CHIP 15PFJCH 50V TAPE
CP73	AA00955R	CAP.CHIP-CERAMIC 2125 B 4.7UF	CT31	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CP74	AA00955R	CAP.CHIP-CERAMIC 2125 B 4.7UF	CT32	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CP75	AA00699R	CAP.CHIP-CERAMIC 10UFK 16V B 3	CT33	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CP79	AA00955R	CAP.CHIP-CERAMIC 2125 B 4.7UF	CT34	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CP81	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	CT35	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CPG1	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT36	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPG2	0893215R	CAP 1608CHIP 3300PFKB 50V TAPE	CT39	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPS1	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	CT40	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPS2	0893213R	CAP1608CHIP 2200PFKB 50V TAPE	CT41	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CPS3	AA00955R	CAP.CHIP-CERAMIC 2125 B 4.7UF	CT42	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CPS4	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT43	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPS5	AA00955R	CAP.CHIP-CERAMIC 2125 B 4.7UF	CT44	0893123R	CAP 1608CHIP 56PFJCH 50V TAPE
CR478	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT45	0893125R	CAP 1608CHIP 82PFJCH 50V TAPE
CS02	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CT46	0893125R	CAP 1608CHIP 82PFJCH 50V TAPE
CS04	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CT47	0893115R	CAP 1608CHIP 15PFJCH 50V TAPE
CS06	AA01126R	CERAMIC CAPACITOR(0.22UF 10V)	CT48	0893106R	CAP 1608CHIP 4PFCCK 50V TAPE
CS09	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CT49	0893121R	CAP 1608CHIP 39PFJCH 50V TAPE
CS11	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32	CT51	0893125R	CAP 1608CHIP 82PFJCH 50V TAPE
CS12	0893197R	CAP 1608CHIP 22000PFKB 25V TAPE	CT52	0893119R	CAP 1608CHIP 33PFJCH 50V TAPE
CS13	AA01123R	CCC105K10-B-16CT	CT53	0893106R	CAP 1608CHIP 4PFCCK 50V TAPE
CS16	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT54	0893124R	CAP 1608CHIP 68PFJCH 50V TAPE
CS17	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT58	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CS18	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32	CT60	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS19	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT61	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CS20	0893219R	CAP 1608CHIP 6800PFKB 50V TAPE	CT62	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS21	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT63	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS23	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT64	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS24	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT65	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS25	0893205R	CAP 1608CHIP 560PFKB 50V TAPE	CT66	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CS26	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT67	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS28	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CT68	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS31	0893193R	CAP 1608CHIP 10000PFKB 25V TAPE	CT69	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CS32	0225037R	CAP 1608CHIP 20PFJCH 50V TAPE	CT70	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
CT71	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CTH1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT72	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CTH2	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT73	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CTH3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT74	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CTH4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT75	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	CTH5	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT76	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTH6	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT77	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTH9	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT78	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CTJ2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT79	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTJ3	AA00969R	CAP.CHIP2125-B-22UF6.3V
CT80	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTJ4	AA00969R	CAP.CHIP2125-B-22UF6.3V
CT81	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CTJ5	0893122R	CAP 1608CHIP 47PFJCH 50V TAPE
CT83	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTJ6	0893123R	CAP 1608CHIP 56PFJCH 50V TAPE
CT84	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTJ7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CT85	0893113R	CAP 1608CHIP 10PFCCH 50V TAPE	CTJ8	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT86	0893113R	CAP 1608CHIP 10PFCCH 50V TAPE	CTJ9	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT87	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK0	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT88	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT89	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK3	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT90	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK4	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT91	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK6	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT92	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK7	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT93	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTK8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT94	AA01216R	CAP.CHIP-CERAMIC 1005B 1UF 6.3	CTM0	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT95	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTM1	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT96	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTM2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT97	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTM3	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT98	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTM4	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CT99	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTM5	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTA0	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CTM6	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTA1	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CTM7	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)
CTA2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTM8	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTA3	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CTN0	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTA4	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTN1	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTA6	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTN2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTA7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTN5	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTA8	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTN6	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTA9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTN7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTC0	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTN8	0893124R	CAP 1608CHIP 68PFJCH 50V TAPE
CTC1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CTP0	0893123R	CAP 1608CHIP 56PFJCH 50V TAPE
CTC2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CTP1	0893107R	CAP 1608CHIP 5PFCCH 50V TAPE
CTC3	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CTP2	0893123R	CAP 1608CHIP 56PFJCH 50V TAPE
CTC4	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CTP3	0893107R	CAP 1608CHIP 5PFCCH 50V TAPE
CTC5	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CV01	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTC6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CV02	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTC7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CV03	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTC8	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CV06	AA00969R	CAP.CHIP2125-B-22UF6.3V
CTC9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CV07	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTE0	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CV08	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTE1	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CV09	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTE2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CV10	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTE4	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CV11	0893008R	CAP.CHIP-CERAMIC 100000PF 16V
CTE5	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CV12	AA00955R	CAP.CHIP-CERAMIC 2125 B 4.7UF
CTE6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CV13	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTE7	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CV14	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTE8	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	CV15	0893217R	CAP 1608CHIP 4700PFKB 50V TAPE
CTE9	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CV16	0893217R	CAP 1608CHIP 4700PFKB 50V TAPE
CTF0	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CV18	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTF1	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CV19	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTF2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CW01	AA01123R	CCC105K10-B-16CT
CTF3	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	CW02	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTF4	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CW03	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTF5	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW08	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTF6	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)	CW09	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTF7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW11	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTG0	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW12	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTG1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW14	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTG2	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW15	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTG3	AA01111R	CERAMIC CAPACITOR(1.0UF 6.3V)	CW16	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTG4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW17	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTG5	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW18	AA00969R	CAP.CHIP2125-B-22UF6.3V
CTG6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW19	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
CTG7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW20	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTG8	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW21	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTG9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW22	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
CTH0	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CW23	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
CW24	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IV05	CK38328R	IC SN74LVC1G125DCKR
CW25	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW01	CK37218R	MONO IC TK11150CSCL
CW26	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW02	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CW27	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW03	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CW28	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW04	CK38327R	DIGITAL MONOLITHIC IC (SN74LVC1G86DCKR)
CW29	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW05	CK51161R	PI5C32X245BEX
CW30	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW06	CK38378R	DIGITAL MONO IC SI-3012KM
CW31	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW07	CK38326R	IC SN74LVC1G32DCKR
CW32	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW08	CK38917R	DIGITAL MONOLITHIC IC (SN74LVC32APWR)
CW33	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW09	CK36321R	SN74LVC125APW
CW34	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW10	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CW35	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	IW11	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CX01	0893119R	CAP 1608CHIP 33PFJCH 50V TAPE	IW12	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CX02	0893119R	CAP 1608CHIP 33PFJCH 50V TAPE	IW13	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CX03	0893119R	CAP 1608CHIP 33PFJCH 50V TAPE	IW14	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CX04	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IW15	CK38326R	IC SN74LVC1G32DCKR
CXJ1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IW16	CK38324R	DIGITAL MONOLITHIC IC (SN74LVC
CXJ2	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	IW17	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)
CXJ3	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	IW18	CK38323R	DIGITAL MONOLITHIC IC (SN74LVC1G08DCKR)
CXJ4	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IW19	CK38328R	IC SN74LVC1G125DCKR
			IW20	CK38323R	DIGITAL MONOLITHIC IC (SN74LVC1G08DCKR)
		DIODES	IXJ1	CK51331R	TK11100CS
D401	CC01891R	SDS511_PF			
D402	CC01891R	SDS511_PF			COILS
D403	CC01891R	SDS511_PF	L401	BH01812R	COIL 10UH 2.1A
D404	CC01891R	SDS511_PF	L402	BH01812R	COIL 10UH 2.1A
D405	CC01891R	SDS511_PF	L403	BH01812R	COIL 10UH 2.1A
D406	CC01891R	SDS511_PF	L404	BH01812R	COIL 10UH 2.1A
DN01	CC02061R	LIGHT EMITTING DIODE SML-020ML	LM02	BA00892R	LBC2518 CHIP COIL 47UH
DP02	CC02022R	ZENER.CHIP UDZSTE-1730B	LN30	BA10986R	LB2012 CHIP COIL 47UH 50MA
DP03	CC01891R	SDS511_PF	LN31	BA10986R	LB2012 CHIP COIL 47UH 50MA
DP09	CC02002R	ZENER.CHIP UDZSTE-175.1B	LP02	BA02185R	HCC221J2520CT
DP11	CC00781R	DIODE.CHIP RB160L-40(TE25)	LP03	BA02244R	HCC102J32CT
DP12	CC01891R	SDS511_PF	LP04	BA02261R	7E08L TYPE POWER INDUCTOR 1.8U
DPS1	CC02211R	RSX201L-30	LP13	BA02253R	7E06NG TYPE POWER INDUCTOR 6.8
DPS2	CC01641R	DIODE HSU119	LP14	BA00885R	LBC2518 CHIP COIL 4.7UH
DS01	CC01891R	SDS511_PF	LP15	BA00885R	LBC2518 CHIP COIL 4.7UH
DT01	CC01131R	ZENER.CHIP MAZS3000H	LPS1	BA02251R	7E06NG TYPE POWER INDUCTOR 4.7
			LS01	BA00892R	LBC2518 CHIP COIL 47UH
		MODULES	LS02	BA00892R	LBC2518 CHIP COIL 47UH
HN30	CZ01271R	REMOCON MODULE(RPM5538-H12)	LS03	BA00892R	LBC2518 CHIP COIL 47UH
HN31	CZ01261R	IRDA MODULE IC (RPM871-H12)	LS04	BA00892R	LBC2518 CHIP COIL 47UH
			LT01	BA00161R	COIL HCC47NK16CT-HK1608
		INTEGRATED CIRCUITS (IC's)	LT02	BA01227R	HK2125 TYPE CHIP INDUCTOR 150N
I401	CK51361R	TAS5508PAG	LT03	BA00162R	CHIP COIL 56NK16CT-HK1608
I402	CK50471R	DIGITAL MONOLITHIC IC (TAS5122	LT04	BA00862R	2520 CHIP COIL 2.2UH
I403	CK07141R	ANALOG MONO. IC (BA4558F-E2)	LT05	BA00192R	CHIP COIL 47NJ16CT-HK1608
I404	CK07141R	ANALOG MONO. IC (BA4558F-E2)	LT06	BA01227R	HK2125 TYPE CHIP INDUCTOR 150N
IM02	CK50961R	SN74CB3T3306DCUR	LT07	BA00162R	CHIP COIL 56NK16CT-HK1608
IM03	CK38326R	IC SN74LVC1G32DCKR	LT08	BA01234R	HK2125 TYPE CHIP INDUCTOR 470N
IN31	CK38324R	DIGITAL MONOLITHIC IC (SN74LVC	LT09	BA00189R	CHIP COIL 33NJ16CT-HK1608
IN32	CK38325R	DIGITAL MONOLITHIC IC (SN74LVC	LT10	BA01234R	HK2125 TYPE CHIP INDUCTOR 470N
INM1	CK50051R	MAX4788EXS-T	LT11	BA01225R	HK2125 TYPE CHIP INDUCTOR 100N
IP05	CK52131R	ANALOG MONOLITHIC IC(VT221H)	LT12	BA00191R	COIL HCC39NJ16CT-HK1608
IP11	CK50461R	ANALOG MONOLITHIC IC(BA6287F-	LT14	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IP12	CK51331R	TK11100CS	LT15	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IP15	CK51571R	ANALOG MONOLITHIC IC(TK11891F	LT16	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IPG1	CK33543R	ANALOG MONOLITHIC IC(PST9227N	LT17	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IPS1	CK52141R	ANALOG MONOLITHIC IC(SC4517AI	LT18	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IS02	CK51111R	BD37A41FVM	LT19	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IS03	CK50991U	M306H3MC-067FP	LT20	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IS05	CK50951R	SN74CB3T3125PWR	LT21	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT01	CK37218R	MONO IC TK11150CSCL	LT22	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT02	CK37605R	IC TK11250CM	LT23	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT04	CK37605R	IC TK11250CM	LT24	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT05	CK51131R	UPC2711TB	LT25	BA02252R	7E06NG TYPE POWER INDUCTOR 6.8
IT06	CK51151R	UPC3221GV	LT26	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT07	CK51141R	UPC3220GR	LT27	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT08	CK51121U	THEATER313	LT28	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT09	CK37211R	MONO IC TK11118CSCL	LT29	BM10348R	CHIP FERRITE BEAD BLM18PG121SN
IT13	CK50071R	TPS62040DGQR	LT30	BA00189R	CHIP COIL 33NJ16CT-HK1608
IV01	CK51091R	SN74LVC1G3157DCKR	LT31	BA01225R	HK2125 TYPE CHIP INDUCTOR 100N
IV02	CK51632R	9DR32DW8-1046	LT32	BA00191R	COIL HCC39NJ16CT-HK1608
IV03	CK38328R	IC SN74LVC1G125DCKR	LV02	BA00892R	LBC2518 CHIP COIL 47UH
IV04	CK51591R	WM8521H9GED/RV	LV03	BA00892R	LBC2518 CHIP COIL 47UH

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
LX01	BA00887R	LBC2518 CHIP COIL 10UH	R428	0790043R	RES.CHIP 1/16W 2.7K OHM
		TRANSISTORS	R429	0790043R	RES.CHIP 1/16W 2.7K OHM
Q401	CA00771R	TRS.CHIP DTC323TK	R430	0790004R	RES.CHIP 1/16W 3.3 OHM
Q402	CA00981R	TRS.CHIP DTC114EE TL	R431	0790004R	RES.CHIP 1/16W 3.3 OHM
Q403	CA00981R	TRS.CHIP DTC114EE TL	R432	0790004R	RES.CHIP 1/16W 3.3 OHM
Q406	CA00981R	TRS.CHIP DTC114EE TL	R433	0790004R	RES.CHIP 1/16W 3.3 OHM
QM04	CA02091R	SRC1204EF_PF	R434	0790004R	RES.CHIP 1/16W 3.3 OHM
QM05	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R435	0790004R	RES.CHIP 1/16W 3.3 OHM
QN01	CA02091R	SRC1204EF_PF	R436	0790004R	RES.CHIP 1/16W 3.3 OHM
QN02	CA02091R	SRC1204EF_PF	R437	0790004R	RES.CHIP 1/16W 3.3 OHM
QN03	CA02091R	SRC1204EF_PF	R446	0790004R	RES.CHIP 1/16W 3.3 OHM
QNM1	CA00981R	TRS.CHIP DTC114EE TL	R447	0790051R	RES.CHIP 1/16W 10K OHM
QNM2	CA00981R	TRS.CHIP DTC114EE TL	R448	0790051R	RES.CHIP 1/16W 10K OHM
QP01	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R449	0790051R	RES.CHIP 1/16W 10K OHM
QP05	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R450	0790051R	RES.CHIP 1/16W 10K OHM
QP06	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R451	0790038R	RES.CHIP 1/16W 1.2K OHM
QP07	CA02091R	SRC1204EF_PF	R452	0790051R	RES.CHIP 1/16W 10K OHM
QP08	CA02091R	SRC1204EF_PF	R453	0790051R	RES.CHIP 1/16W 10K OHM
QP09	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R454	0790038R	RES.CHIP 1/16W 1.2K OHM
QP10	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R455	0790037R	RES.CHIP 1/16W 1.0K OHM
QPK1	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R456	0790042R	RES.CHIP 1/16W 2.2K OHM
QS02	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R457	0790038R	RES.CHIP 1/16W 1.2K OHM
QS04	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R458	0790042R	RES.CHIP 1/16W 2.2K OHM
QS06	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R460	0790042R	RES.CHIP 1/16W 2.2K OHM
QS09	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R461	0790046R	RES.CHIP 1/16W 4.7K OHM
QS10	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R463	0790046R	RES.CHIP 1/16W 4.7K OHM
QS11	CA02161R	TRS.CHIP SUT485J	R464	0790051R	RES.CHIP 1/16W 10K OHM
QS12	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R465	0790051R	RES.CHIP 1/16W 10K OHM
QS14	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R466	0790077R	RES.CHIP 1/16W 1.0M OHM
QS15	CA02091R	SRC1204EF_PF	R471	0790024R	RES.CHIP 1/16W 100 OHM
QS16	CA00981R	TRS.CHIP DTC114EE TL	R472	0790024R	RES.CHIP 1/16W 100 OHM
QS18	CA00981R	TRS.CHIP DTC114EE TL	R473	0790024R	RES.CHIP 1/16W 100 OHM
QS19	CA02091R	SRC1204EF_PF	R474	0790024R	RES.CHIP 1/16W 100 OHM
QS21	CA02091R	SRC1204EF_PF	R475	0790051R	RES.CHIP 1/16W 10K OHM
QS22	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R476	0790051R	RES.CHIP 1/16W 10K OHM
QS23	CA02091R	SRC1204EF_PF	R477	0790042R	RES.CHIP 1/16W 2.2K OHM
QS24	CA02091R	SRC1204EF_PF	R479	0790024R	RES.CHIP 1/16W 100 OHM
QS26	CA02091R	SRC1204EF_PF	R480	0790024R	RES.CHIP 1/16W 100 OHM
QT01	CA02171R	TRS.CHIP 2SC4082T106P	R481	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QT02	CA02171R	TRS.CHIP 2SC4082T106P	R482	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QT03	CA02171R	TRS.CHIP 2SC4082T106P	R483	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QV01	CA02091R	SRC1204EF_PF	R485	0790019R	RES.CHIP 1/16W 47 OHM
QV02	CA02142R	TRS.CHIP 2SC5343UFG_PF	R486	0790019R	RES.CHIP 1/16W 47 OHM
QW01	CA02171R	TRS.CHIP 2SC4082T106P	R487	0790019R	RES.CHIP 1/16W 47 OHM
QW02	CA02091R	SRC1204EF_PF	R488	0790019R	RES.CHIP 1/16W 47 OHM
QX01	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R489	0790019R	RES.CHIP 1/16W 47 OHM
QX02	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R490	0790019R	RES.CHIP 1/16W 47 OHM
QX03	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R491	0790019R	RES.CHIP 1/16W 47 OHM
			R492	0790019R	RES.CHIP 1/16W 47 OHM
		RESISTORS	RM04	0790037R	RES.CHIP 1/16W 1.0K OHM
R401	AQ00175R	RES.CHIP 1/16W 200 OHM TAPE	RM09	0790051R	RES.CHIP 1/16W 10K OHM
R402	AQ00175R	RES.CHIP 1/16W 200 OHM TAPE	RM13	0790022R	RES.CHIP 1/16W 68 OHM
R403	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM14	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R404	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM15	0790046R	RES.CHIP 1/16W 4.7K OHM
R405	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM16	0790046R	RES.CHIP 1/16W 4.7K OHM
R406	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM17	0790046R	RES.CHIP 1/16W 4.7K OHM
R407	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM18	0790059R	RES.CHIP 1/16W 47K OHM
R409	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM19	0790015R	RES.CHIP 1/16W 22 OHM
R410	0790055R	RES.CHIP 1/16W 22K OHM	RM20	0790015R	RES.CHIP 1/16W 22 OHM
R411	0790064R	RES.CHIP 1/16W 100K OHM	RM21	0790015R	RES.CHIP 1/16W 22 OHM
R412	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM22	0790015R	RES.CHIP 1/16W 22 OHM
R413	0790024R	RES.CHIP 1/16W 100 OHM	RM30	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R414	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RM31	0790051R	RES.CHIP 1/16W 10K OHM
R416	0790002R	RES.CHIP 1/16W 2.2 OHM	RM32	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R417	AQ00511R	CHIP RESISTOR 10OHM	RN03	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R418	AQ00511R	CHIP RESISTOR 10OHM	RN06	0790033R	RES.CHIP 1/16W 470 OHM
R419	AQ00511R	CHIP RESISTOR 10OHM	RN07	0790039R	RES.CHIP 1/16W 1.5K OHM
R420	0790002R	RES.CHIP 1/16W 2.2 OHM	RN09	0790055R	RES.CHIP 1/16W 22K OHM
R421	0790002R	RES.CHIP 1/16W 2.2 OHM	RN31	0790024R	RES.CHIP 1/16W 100 OHM
R422	AQ00511R	CHIP RESISTOR 10OHM	RN33	0790024R	RES.CHIP 1/16W 100 OHM
R423	0790002R	RES.CHIP 1/16W 2.2 OHM	RNM1	AQ00564R	CHIP RESISTOR 100KOHM
R424	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RNM2	AQ00564R	CHIP RESISTOR 100KOHM
R425	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RNM3	0790061R	RES.CHIP 1/16W 56K OHM
R426	0790043R	RES.CHIP 1/16W 2.7K OHM	RNM4	AQ00501R	CHIP RESISTOR 0OHM
R427	0790043R	RES.CHIP 1/16W 2.7K OHM	RNM5	AQ00519R	CHIP RESISTOR 47OHM

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
RNM7	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RS25	0790057R	RES.CHIP 1/16W 33K OHM
RNM8	0790038R	RES.CHIP 1/16W 1.2K OHM	RS26	0790051R	RES.CHIP 1/16W 10K OHM
RNM9	0790051R	RES.CHIP 1/16W 10K OHM	RS27	0790063R	RES.CHIP 1/16W 82K OHM
RNN2	0790038R	RES.CHIP 1/16W 1.2K OHM	RS28	0790042R	RES.CHIP 1/16W 2.2K OHM
RNN3	0790051R	RES.CHIP 1/16W 10K OHM	RS30	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RP01	0790019R	RES.CHIP 1/16W 47 OHM	RS32	0790046R	RES.CHIP 1/16W 4.7K OHM
RP02	0790019R	RES.CHIP 1/16W 47 OHM	RS33	0790027R	RES.CHIP 1/16W 180 OHM
RP03	0790024R	RES.CHIP 1/16W 100 OHM	RS35	0790051R	RES.CHIP 1/16W 10K OHM
RP07	0790059R	RES.CHIP 1/16W 47K OHM	RS36	0790055R	RES.CHIP 1/16W 22K OHM
RP08	0790055R	RES.CHIP 1/16W 22K OHM	RS37	0790052R	RES.CHIP 1/16W 12K OHM
RP18	AQ00528R	CHIP RESISTOR 220OHM	RS38	0790046R	RES.CHIP 1/16W 4.7K OHM
RP19	AQ00528R	CHIP RESISTOR 220OHM	RS40	0790059R	RES.CHIP 1/16W 47K OHM
RP20	0790051R	RES.CHIP 1/16W 10K OHM	RS41	0790055R	RES.CHIP 1/16W 22K OHM
RP21	0790037R	RES.CHIP 1/16W 1.0K OHM	RS42	0790064R	RES.CHIP 1/16W 100K OHM
RP22	AQ00223R	RES.CHIP 1/16W 12K OHM TAPE	RS43	0790064R	RES.CHIP 1/16W 100K OHM
RP23	AQ00243R	RES.CHIP 1/16W 68K OHM TAPE	RS45	0790046R	RES.CHIP 1/16W 4.7K OHM
RP24	AQ00237R	RES.CHIP 1/16W 43K OHM TAPE	RS46	0790047R	RES.CHIP 1/16W 5.6K OHM
RP25	0790064R	RES.CHIP 1/16W 100K OHM	RS47	0790047R	RES.CHIP 1/16W 5.6K OHM
RP26	AQ00247R	RES.CHIP 1/16W 100K OHM TAPE	RS48	0790056R	RES.CHIP 1/16W 27K OHM
RP27	AQ00227R	RES.CHIP 1/16W 18K OHM TAPE	RS49	0790059R	RES.CHIP 1/16W 47K OHM
RP28	0790051R	RES.CHIP 1/16W 10K OHM	RS51	0790024R	RES.CHIP 1/16W 100 OHM
RP61	0790024R	RES.CHIP 1/16W 100 OHM	RS54	0790038R	RES.CHIP 1/16W 1.2K OHM
RP64	0790024R	RES.CHIP 1/16W 100 OHM	RS55	AQ00537R	4-NETWORKED CHIP RESISTOR 1.0K
RP65	0790024R	RES.CHIP 1/16W 100 OHM	RS56	0790052R	RES.CHIP 1/16W 12K OHM
RP66	AQ01954R	RES.CHIP RK73B3ATTE 5R6J	RS57	0790051R	RES.CHIP 1/16W 10K OHM
RP67	0790051R	RES.CHIP 1/16W 10K OHM	RS58	0790051R	RES.CHIP 1/16W 10K OHM
RP68	AQ01938R	RES.CHIP RK73B3ATTE 1R5J	RS59	0790037R	RES.CHIP 1/16W 1.0K OHM
RP69	0790037R	RES.CHIP 1/16W 1.0K OHM	RS60	0790047R	RES.CHIP 1/16W 5.6K OHM
RP70	0790077R	RES.CHIP 1/16W 1.0M OHM	RS61	0790047R	RES.CHIP 1/16W 5.6K OHM
RP71	0790051R	RES.CHIP 1/16W 10K OHM	RS62	0790047R	RES.CHIP 1/16W 5.6K OHM
RP72	0790051R	RES.CHIP 1/16W 10K OHM	RS63	0790037R	RES.CHIP 1/16W 1.0K OHM
RP75	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RS64	0790033R	RES.CHIP 1/16W 470 OHM
RP76	AQ00245R	RES.CHIP 1/16W 82K OHM TAPE	RS65	0790051R	RES.CHIP 1/16W 10K OHM
RP77	AQ00233R	RES.CHIP 1/16W 30K OHM TAPE	RS67	0790051R	RES.CHIP 1/16W 10K OHM
RP78	0790051R	RES.CHIP 1/16W 10K OHM	RS68	0790037R	RES.CHIP 1/16W 1.0K OHM
RP80	0790024R	RES.CHIP 1/16W 100 OHM	RS69	0790024R	RES.CHIP 1/16W 100 OHM
RP81	0790047R	RES.CHIP 1/16W 5.6K OHM	RS71	0790051R	RES.CHIP 1/16W 10K OHM
RPA3	0790055R	RES.CHIP 1/16W 22K OHM	RS73	AQ00524R	CHIP RESISTOR 100OHM
RPA4	0790055R	RES.CHIP 1/16W 22K OHM	RS74	0790037R	RES.CHIP 1/16W 1.0K OHM
RPA5	0790059R	RES.CHIP 1/16W 47K OHM	RS75	0790051R	RES.CHIP 1/16W 10K OHM
RPA6	0790024R	RES.CHIP 1/16W 100 OHM	RS76	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RPA7	0790059R	RES.CHIP 1/16W 47K OHM	RS77	0790059R	RES.CHIP 1/16W 47K OHM
RPA8	0790011R	RES.CHIP 1/16W 10 OHM	RS83	0790024R	RES.CHIP 1/16W 100 OHM
RPA9	0790045R	RES.CHIP 1/16W 3.9K OHM	RS85	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RPC1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RS86	0790037R	RES.CHIP 1/16W 1.0K OHM
RPC5	AQ00245R	RES.CHIP 1/16W 82K OHM TAPE	RS88	0790042R	RES.CHIP 1/16W 2.2K OHM
RPC6	AQ00198R	RES.CHIP 1/16W 1.5K OHM TAPE	RS90	0790037R	RES.CHIP 1/16W 1.0K OHM
RPC7	AQ00212R	RES.CHIP 1/16W 4.7K OHM TAPE	RS91	0790037R	RES.CHIP 1/16W 1.0K OHM
RPE1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RS92	0790051R	RES.CHIP 1/16W 10K OHM
RPG1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RS94	0790037R	RES.CHIP 1/16W 1.0K OHM
RPG2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RS97	0790037R	RES.CHIP 1/16W 1.0K OHM
RPG3	0790046R	RES.CHIP 1/16W 4.7K OHM	RS98	0790051R	RES.CHIP 1/16W 10K OHM
RPK1	0790043R	RES.CHIP 1/16W 2.7K OHM	RSA4	0790051R	RES.CHIP 1/16W 10K OHM
RPK2	0790051R	RES.CHIP 1/16W 10K OHM	RSA5	0790037R	RES.CHIP 1/16W 1.0K OHM
RPK3	0790055R	RES.CHIP 1/16W 22K OHM	RSA6	0790051R	RES.CHIP 1/16W 10K OHM
RPK4	0790051R	RES.CHIP 1/16W 10K OHM	RSA7	AQ00524R	CHIP RESISTOR 100OHM
RPK9	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RSA8	0790051R	RES.CHIP 1/16W 10K OHM
RPS1	0790037R	RES.CHIP 1/16W 1.0K OHM	RSA9	0790037R	RES.CHIP 1/16W 1.0K OHM
RPS2	0790051R	RES.CHIP 1/16W 10K OHM	RSC1	0790037R	RES.CHIP 1/16W 1.0K OHM
RPS3	AQ00236R	RES.CHIP 1/16W 39K OHM TAPE	RSC3	0790051R	RES.CHIP 1/16W 10K OHM
RPS4	AQ00223R	RES.CHIP 1/16W 12K OHM TAPE	RSC4	0790051R	RES.CHIP 1/16W 10K OHM
RPX8	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RSC6	0790037R	RES.CHIP 1/16W 1.0K OHM
RS01	0790024R	RES.CHIP 1/16W 100 OHM	RSC7	0790051R	RES.CHIP 1/16W 10K OHM
RS04	0790046R	RES.CHIP 1/16W 4.7K OHM	RSC9	AQ00186R	RES.CHIP 1/16W 510 OHM TAPE
RS07	0790058R	RES.CHIP 1/16W 39K OHM	RSE0	0790024R	RES.CHIP 1/16W 100 OHM
RS08	0790059R	RES.CHIP 1/16W 47K OHM	RSE2	0790024R	RES.CHIP 1/16W 100 OHM
RS10	0790059R	RES.CHIP 1/16W 47K OHM	RSE4	AQ00524R	CHIP RESISTOR 100OHM
RS12	0790024R	RES.CHIP 1/16W 100 OHM	RSE5	AQ00524R	CHIP RESISTOR 100OHM
RS14	0790061R	RES.CHIP 1/16W 56K OHM	RSE6	0196075R	RES 1608 CHIP 1/16W 2.0KJ TAPE
RS16	0790044R	RES.CHIP 1/16W 3.3K OHM	RSE7	0790051R	RES.CHIP 1/16W 10K OHM
RS18	0790037R	RES.CHIP 1/16W 1.0K OHM	RSE9	AQ00551R	CHIP RESISTOR 10KOHM
RS19	0790024R	RES.CHIP 1/16W 100 OHM	RSF0	AQ00471R	RES.-CHIP 1/16W 10K-J (2 UNIT)
RS20	0790037R	RES.CHIP 1/16W 1.0K OHM	RSF1	0196075R	RES 1608 CHIP 1/16W 2.0KJ TAPE
RS21	0790037R	RES.CHIP 1/16W 1.0K OHM	RSF2	0790059R	RES.CHIP 1/16W 47K OHM
RS22	0790051R	RES.CHIP 1/16W 10K OHM	RSF3	0790051R	RES.CHIP 1/16W 10K OHM

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
RSF5	0790051R	RES.CHIP 1/16W 10K OHM	RT71	AQ00261R	RES.CHIP 1/16W 330K OHM TAPE
RSF7	0790059R	RES.CHIP 1/16W 47K OHM	RT72	AQ00258R	RES.CHIP 1/16W 270K OHM TAPE
RSF8	0790059R	RES.CHIP 1/16W 47K OHM	RT73	0790043R	RES.CHIP 1/16W 2.7K OHM
RSF9	0790059R	RES.CHIP 1/16W 47K OHM	RT74	0790043R	RES.CHIP 1/16W 2.7K OHM
RSG0	0790051R	RES.CHIP 1/16W 10K OHM	RT75	0790019R	RES.CHIP 1/16W 47 OHM
RSG1	0790051R	RES.CHIP 1/16W 10K OHM	RT76	0790019R	RES.CHIP 1/16W 47 OHM
RSG3	0790051R	RES.CHIP 1/16W 10K OHM	RV01	0790024R	RES.CHIP 1/16W 100 OHM
RSG4	0790051R	RES.CHIP 1/16W 10K OHM	RV02	0790024R	RES.CHIP 1/16W 100 OHM
RSG5	0790051R	RES.CHIP 1/16W 10K OHM	RV03	0790024R	RES.CHIP 1/16W 100 OHM
RSG6	0790051R	RES.CHIP 1/16W 10K OHM	RV04	0790051R	RES.CHIP 1/16W 10K OHM
RSG7	0790051R	RES.CHIP 1/16W 10K OHM	RV06	0790024R	RES.CHIP 1/16W 100 OHM
RSG8	0790024R	RES.CHIP 1/16W 100 OHM	RV07	0790047R	RES.CHIP 1/16W 5.6K OHM
RSG9	0790024R	RES.CHIP 1/16W 100 OHM	RV08	0790024R	RES.CHIP 1/16W 100 OHM
RSH0	0790024R	RES.CHIP 1/16W 100 OHM	RV09	0790051R	RES.CHIP 1/16W 10K OHM
RSH1	0790037R	RES.CHIP 1/16W 1.0K OHM	RV10	0790037R	RES.CHIP 1/16W 1.0K OHM
RSH3	0790037R	RES.CHIP 1/16W 1.0K OHM	RV11	0790037R	RES.CHIP 1/16W 1.0K OHM
RSH4	0790024R	RES.CHIP 1/16W 100 OHM	RV12	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RSH5	0790024R	RES.CHIP 1/16W 100 OHM	RV13	0790077R	RES.CHIP 1/16W 1.0M OHM
RSH6	0790037R	RES.CHIP 1/16W 1.0K OHM	RV14	0790051R	RES.CHIP 1/16W 10K OHM
RSH7	0790037R	RES.CHIP 1/16W 1.0K OHM	RV15	0790051R	RES.CHIP 1/16W 10K OHM
RSJ3	0790051R	RES.CHIP 1/16W 10K OHM	RV16	AQ00185R	RES.CHIP 1/16W 470 OHM TAPE
RSK1	0790051R	RES.CHIP 1/16W 10K OHM	RV17	AQ00185R	RES.CHIP 1/16W 470 OHM TAPE
RSK3	0790051R	RES.CHIP 1/16W 10K OHM	RV21	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RSK4	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RV24	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RSK5	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RV25	0790047R	RES.CHIP 1/16W 5.6K OHM
RSK8	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RV26	0790047R	RES.CHIP 1/16W 5.6K OHM
RT01	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RV27	0790025R	RES.CHIP 1/16W 120 OHM
RT02	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RV28	0790019R	RES.CHIP 1/16W 47 OHM
RT04	0790052R	RES.CHIP 1/16W 12K OHM	RW01	AQ00519R	CHIP RESISTOR 47OHM
RT05	0790052R	RES.CHIP 1/16W 12K OHM	RW02	AQ00519R	CHIP RESISTOR 47OHM
RT07	0790037R	RES.CHIP 1/16W 1.0K OHM	RW03	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RT08	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	RW04	AQ00519R	CHIP RESISTOR 47OHM
RT09	0790043R	RES.CHIP 1/16W 2.7K OHM	RW05	0790019R	RES.CHIP 1/16W 47 OHM
RT10	AQ00258R	RES.CHIP 1/16W 270K OHM TAPE	RW06	0790019R	RES.CHIP 1/16W 47 OHM
RT11	AQ00247R	RES.CHIP 1/16W 100K OHM TAPE	RW07	AQ00519R	CHIP RESISTOR 47OHM
RT12	AQ00229R	RES.CHIP 1/16W 22K OHM TAPE	RW08	AQ00519R	CHIP RESISTOR 47OHM
RT14	0790046R	RES.CHIP 1/16W 4.7K OHM	RW09	AQ00519R	CHIP RESISTOR 47OHM
RT15	0790037R	RES.CHIP 1/16W 1.0K OHM	RW10	0790019R	RES.CHIP 1/16W 47 OHM
RT16	0790046R	RES.CHIP 1/16W 4.7K OHM	RW11	0790019R	RES.CHIP 1/16W 47 OHM
RT17	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW12	AQ00519R	CHIP RESISTOR 47OHM
RT18	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW13	AQ00519R	CHIP RESISTOR 47OHM
RT19	0790024R	RES.CHIP 1/16W 100 OHM	RW14	0790019R	RES.CHIP 1/16W 47 OHM
RT20	0790024R	RES.CHIP 1/16W 100 OHM	RW15	0790019R	RES.CHIP 1/16W 47 OHM
RT21	0790052R	RES.CHIP 1/16W 12K OHM	RW16	AQ00519R	CHIP RESISTOR 47OHM
RT22	AQ00212R	RES.CHIP 1/16W 4.7K OHM TAPE	RW17	0790019R	RES.CHIP 1/16W 47 OHM
RT23	AQ00244R	RES.CHIP 1/16W 75K OHM TAPE	RW18	0790019R	RES.CHIP 1/16W 47 OHM
RT24	0790046R	RES.CHIP 1/16W 4.7K OHM	RW19	AQ00519R	CHIP RESISTOR 47OHM
RT25	0790046R	RES.CHIP 1/16W 4.7K OHM	RW20	0790051R	RES.CHIP 1/16W 10K OHM
RT26	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW22	0790051R	RES.CHIP 1/16W 10K OHM
RT27	0790024R	RES.CHIP 1/16W 100 OHM	RW23	0790051R	RES.CHIP 1/16W 10K OHM
RT28	0790024R	RES.CHIP 1/16W 100 OHM	RW24	0790064R	RES.CHIP 1/16W 100K OHM
RT30	AQ00175R	RES.CHIP 1/16W 200 OHM TAPE	RW25	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RT31	AQ00175R	RES.CHIP 1/16W 200 OHM TAPE	RW26	0790051R	RES.CHIP 1/16W 10K OHM
RT32	0790037R	RES.CHIP 1/16W 1.0K OHM	RW27	0790051R	RES.CHIP 1/16W 10K OHM
RT33	0790028R	RES.CHIP 1/16W 220 OHM	RW29	0195250R	RES 2125 CHIP JAMPER WIRE
RT34	0790028R	RES.CHIP 1/16W 220 OHM	RW31	AQ00243R	RES.CHIP 1/16W 68K OHM TAPE
RT36	0790037R	RES.CHIP 1/16W 1.0K OHM	RW32	AQ00247R	RES.CHIP 1/16W 100K OHM TAPE
RT37	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW33	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RT40	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW34	AQ00231R	RES.CHIP 1/16W 24K OHM TAPE
RT42	AQ00175R	RES.CHIP 1/16W 200 OHM TAPE	RW35	AQ00258R	RES.CHIP 1/16W 270K OHM TAPE
RT43	AQ00175R	RES.CHIP 1/16W 200 OHM TAPE	RW36	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RT44	0790019R	RES.CHIP 1/16W 47 OHM	RW37	0790019R	RES.CHIP 1/16W 47 OHM
RT45	0790019R	RES.CHIP 1/16W 47 OHM	RW38	0790019R	RES.CHIP 1/16W 47 OHM
RT46	0790011R	RES.CHIP 1/16W 10 OHM	RW40	0790051R	RES.CHIP 1/16W 10K OHM
RT47	0790011R	RES.CHIP 1/16W 10 OHM	RW41	0790051R	RES.CHIP 1/16W 10K OHM
RT48	0790011R	RES.CHIP 1/16W 10 OHM	RW42	0790051R	RES.CHIP 1/16W 10K OHM
RT49	AQ00511R	CHIP RESISTOR 10OHM	RW43	AZ01031R	THERMISTOR NANOSMDC050F13.2
RT50	AQ00511R	CHIP RESISTOR 10OHM	RW44	0790019R	RES.CHIP 1/16W 47 OHM
RT56	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW45	0790019R	RES.CHIP 1/16W 47 OHM
RT57	0790035R	RES.CHIP 1/16W 680 OHM	RW47	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RT64	0790051R	RES.CHIP 1/16W 10K OHM	RW48	0790051R	RES.CHIP 1/16W 10K OHM
RT65	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW49	0790051R	RES.CHIP 1/16W 10K OHM
RT66	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RW50	0790051R	RES.CHIP 1/16W 10K OHM
RT69	0790051R	RES.CHIP 1/16W 10K OHM	RW51	0790051R	RES.CHIP 1/16W 10K OHM
RT70	0790051R	RES.CHIP 1/16W 10K OHM	RW52	0790051R	RES.CHIP 1/16W 10K OHM

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
RW54	0790064R	RES.CHIP 1/16W 100K OHM	PST1	EA02241R	CPC68FP0R5H
RW55	0790051R	RES.CHIP 1/16W 10K OHM	PST2	EA02322R	3P 1.0MM PITCH CONNE. 501331-0
RW58	AQ00519R	CHIP RESISTOR 47OHM	PSU	2902266	PLUG PIN SUB MINI 7P
RW59	AQ00519R	CHIP RESISTOR 47OHM	JNM1	EY01771R	SD MEMORY CARD 54794-0978
RW61	0790019R	RES.CHIP 1/16W 47 OHM	JT01	2670771	PHONO JACK
RW62	0790019R	RES.CHIP 1/16W 47 OHM			
RW63	0790051R	RES.CHIP 1/16W 10K OHM			MISCELLANEOUS
RW64	0790051R	RES.CHIP 1/16W 10K OHM	UT01	HJ00541	ENV56N01D5F (TUNER)
RW65	0790051R	RES.CHIP 1/16W 10K OHM	#B	JA05978	PSB DW1-U SUB DIGITAL
RW66	0790051R	RES.CHIP 1/16W 10K OHM	NW01~4	MJ02881	M2X8 SCREW WITH WASHER
RW67	0790051R	RES.CHIP 1/16W 10K OHM			
RW68	0790051R	RES.CHIP 1/16W 10K OHM			**TERMINAL PWB**
RW69	AQ00519R	CHIP RESISTOR 47OHM			
RW70	AQ00519R	CHIP RESISTOR 47OHM			CAPACITORS
RW71	AQ00519R	CHIP RESISTOR 47OHM	C101	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW73	0790064R	RES.CHIP 1/16W 100K OHM	C102	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW74	0790019R	RES.CHIP 1/16W 47 OHM	C103	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW75	0790019R	RES.CHIP 1/16W 47 OHM	C104	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW76	0790051R	RES.CHIP 1/16W 10K OHM	C105	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW77	0790051R	RES.CHIP 1/16W 10K OHM	C106	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW78	0790051R	RES.CHIP 1/16W 10K OHM	C107	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW79	AQ00551R	CHIP RESISTOR 10KOHM	C108	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW80	AQ00551R	CHIP RESISTOR 10KOHM	C109	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW81	0790019R	RES.CHIP 1/16W 47 OHM	C114	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW82	0790019R	RES.CHIP 1/16W 47 OHM	C115	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW83	0790051R	RES.CHIP 1/16W 10K OHM	C116	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW85	0790051R	RES.CHIP 1/16W 10K OHM	C117	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RW87	0790019R	RES.CHIP 1/16W 47 OHM	C118	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RW88	0790062R	RES.CHIP 1/16W 68K OHM	C119	AA00968R	CCC106M06-B-20CT (10UF 6.3V 2012M)
RW89	0790057R	RES.CHIP 1/16W 33K OHM	C120	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RX01	0790019R	RES.CHIP 1/16W 47 OHM	C122	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32
RX02	0790019R	RES.CHIP 1/16W 47 OHM	C123	0893119R	CAP 1608CHIP 33PFJCH 50V TAPE
RX03	0790019R	RES.CHIP 1/16W 47 OHM	C124	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RX04	0790029R	RES.CHIP 1/16W 270 OHM	C125	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RX05	0790029R	RES.CHIP 1/16W 270 OHM	C126	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RX06	0790029R	RES.CHIP 1/16W 270 OHM	C127	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RX07	0790024R	RES.CHIP 1/16W 100 OHM	C128	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RX08	0790024R	RES.CHIP 1/16W 100 OHM	C129	AA01123R	CCC105K10-B-16CT
RX09	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	C130	AA01123R	CCC105K10-B-16CT
RX10	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	C131	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
RX12	0790024R	RES.CHIP 1/16W 100 OHM	C132	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32
RXJ1	AQ00241R	RES.CHIP 1/16W 56K OHM TAPE	C133	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RXJ2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	C134	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
RXJ3	AQ00261R	RES.CHIP 1/16W 330K OHM TAPE	C135	0893119R	CAP 1608CHIP 33PFJCH 50V TAPE
			C136	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
		TEST POINTS	C137	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
TPM1	EA00002R	CHECKER CHIP 2125 TAPING	C138	AA01123R	CCC105K10-B-16CT
TPM2	EA00002R	CHECKER CHIP 2125 TAPING	C139	AA01113R	CCC225K06-B-16CT
TPP1	EA00001R	CHECKER CHIP 3216 TAPING	C140	AA00951R	CERAMIC CAPACITOR(1.0UF 16V)
			C141	0893205R	CAP 1608CHIP 560PFKB 50V TAPE
		CRYSTALS, FILTERS	C144	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
X401	BL01183R	CSTCE13M5V53-R0	C148	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XP04	BK10324R	CERAMIC FILTER NFM2012P13C105BT1	C149	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE
XPS1	BK10323R	CERAMIC FILTER NFM2012P13C105F	C1A1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XS02	BL00972R	10MHzRESONATOR	C1A2	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT01	BG01624U	SAW FILTER(X6875D)	C1A3	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT02	BN00261	BGS TRAP MKTGA47M2CAHP00B05	C1A4	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT03	BG01625U	SAW FILTER(X6888D)	C1A5	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT04	BL01491R	OSC25R14X10T	C1A6	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT05	BK10324R	CERAMIC FILTER NFM2012P13C105BT1	C1A7	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT06	BK00211R	CERAMIC FILTER LFA20-2A1E103MT	C1A8	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XT07	BK00211R	CERAMIC FILTER LFA20-2A1E103MT	C1A9	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
XV01	BL01182R	CSTCE16M0V53-R0	C1C1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
			C1C2	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
		CONNECTORS	C1C3	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
P401	2902264	PLUG PIN SUB MINI 5P	C1C4	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
P402	2902265	PLUG PIN SUB MINI 6P	C1C5	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
PCS2	EA02355R	15P 1.0MM PITCH CONNE. -501**	C1C6	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
PFAN	EA02132R	3P SMT PH CONNE. POST -LF-	C1C7	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
PPS1	2902272	PLUG PIN SUB MINI 12P	C1C8	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32
PPS2	ED01194	PLUG	C1E1	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
PSC	EA02337R	30P 1.0MM PITCH CONNE. 501331-	C1E2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
PSM	EA02221U	0.5 PITCH 240P B TO B CONN. SH	C1E3	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
PSP1	EA01632	CPC68PH1R27HSCAA1A1	C1E5	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
PSP2	EA01641	SCAB1A5100	C1E7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
C1E8	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32	LTJ1	BA02244R	HCC102J32CT
C1F2	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	LTJ2	BA02185R	HCC221J2520CT
C1M1	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE			
C1P1	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE			TRANSISTORS
C1P2	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	Q101	1323293R	TRS.CHIP 2SC4617 TL (R/S)
C1P3	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	Q102	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C1P4	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	Q103	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C1P5	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	Q104	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C1P6	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	Q107	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C1P7	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	Q108	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C1P8	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	Q109	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C3J1	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	Q1A1	CA00461R	TRS.CHIP 2SD2114K 20V TAPE
C3J2	AA00951R	CERAMIC CAPACITOR(1.0UF 16V)	Q1A2	CA00461R	TRS.CHIP 2SD2114K 20V TAPE
C3J3	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	Q1A3	1323391	PHOTO TRANSISTOR
C3M1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	QRJ1	CA11641R	PHOTO TRANSISTOR
C3M2	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	QRJ2	CA11641R	PHOTO TRANSISTOR
C3M3	AA01123R	CCC105K10-B-16CT	QRJ3	1323294R	TRS.CHIP 2SA1774 TL (R/S)
C3M4	AA01123R	CCC105K10-B-16CT	QTJ1	1323293R	TRS.CHIP 2SC4617 TL (R/S)
C3M5	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE			
C3M6	AA00966R	CERAMIC CAPACITOR(4.7UF 6.3V)			RESISTORS
C901A △	AN01447S	ACROSS CAPA 0.47UF 250V RE474	R101	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE
C902 △	AN01445S	ACROSS CAPA 0.22UF 250V RE224	R102	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE
CR01	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R104	0790051R	RES.CHIP 1/16W 10K OHM
CR02	AD00633R	CEC471M16-EWMT 105	R106	0790051R	RES.CHIP 1/16W 10K OHM
CR03	AD00633R	CEC471M16-EWMT 105	R108	0790051R	RES.CHIP 1/16W 10K OHM
CRJ1	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	R112	0790037R	RES.CHIP 1/16W 1.0K OHM
CRJ2	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	R114	0790037R	RES.CHIP 1/16W 1.0K OHM
CRJ3	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	R115	0790037R	RES.CHIP 1/16W 1.0K OHM
CRJ4	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE	R117	0790037R	RES.CHIP 1/16W 1.0K OHM
CRJ5	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32	R118	0790064R	RES.CHIP 1/16W 100K OHM
CRJ6	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	R119	0790064R	RES.CHIP 1/16W 100K OHM
CRJ7	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	R120	0790051R	RES.CHIP 1/16W 10K OHM
CTJ1	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	R122	0790037R	RES.CHIP 1/16W 1.0K OHM
CTJ2	AA00966R	CERAMIC CAPACITOR(4.7UF 6.3V)	R123	0790064R	RES.CHIP 1/16W 100K OHM
CTJ3	AA01123R	CCC105K10-B-16CT	R124	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
CTJ4	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R126	0790024R	RES.CHIP 1/16W 100 OHM
CTJ5	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R127	0790024R	RES.CHIP 1/16W 100 OHM
CTJ9	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R132	0790024R	RES.CHIP 1/16W 100 OHM
CTK1	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R133	0790051R	RES.CHIP 1/16W 10K OHM
CTK2	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R134	0790051R	RES.CHIP 1/16W 10K OHM
CTK3	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE	R135	0790064R	RES.CHIP 1/16W 100K OHM
CTK4	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R137	0790064R	RES.CHIP 1/16W 100K OHM
CTK5	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE	R138	0790064R	RES.CHIP 1/16W 100K OHM
CTK6	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	R139	0790064R	RES.CHIP 1/16W 100K OHM
CTK7	0893211R	CAP 1608CHIP 1500PFKB 50V TAPE	R140	0790024R	RES.CHIP 1/16W 100 OHM
CTK8	0893179R	CAP.CHIP-CERAMIC 100000PF 16V TAPE	R141	0790024R	RES.CHIP 1/16W 100 OHM
CTK9	AA01123R	CCC105K10-B-16CT	R146	0790024R	RES.CHIP 1/16W 100 OHM
			R150	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
		DIODES	R152	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
D1A1	CC01994R	ZENER.CHIP UDZSTE-172.7B	R154	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
D1A2	CC01994R	ZENER.CHIP UDZSTE-172.7B	R155	0790051R	RES.CHIP 1/16W 10K OHM
D1A3	CC01891R	SDS511_PF	R156	0790037R	RES.CHIP 1/16W 1.0K OHM
DRJ1	CC01999R	ZENER.CHIP UDZSTE-174.3B	R157	0790059R	RES.CHIP 1/16W 47K OHM
DRJ2	CC01999R	ZENER.CHIP UDZSTE-174.3B	R158	0790059R	RES.CHIP 1/16W 47K OHM
DTJ1	CC01891R	SDS511_PF	R159	0790033R	RES.CHIP 1/16W 470 OHM
DTJ2	CC02022R	ZENER.CHIP UDZSTE-1730B	R162	0790041R	RES.CHIP 1/16W 1.8K OHM
			R163	0790041R	RES.CHIP 1/16W 1.8K OHM
		PROTECTORS, FUSES	R164	0790041R	RES.CHIP 1/16W 1.8K OHM
F902 △	FN00439	HT FUSE 250V 6.3A 5.2X20MM	R165	0790024R	RES.CHIP 1/16W 100 OHM
			R166	0790024R	RES.CHIP 1/16W 100 OHM
		INTEGRATED CIRCUITS (IC's)	R167	0790024R	RES.CHIP 1/16W 100 OHM
I101	CK39882U	MM1630CQ	R168	0790036R	RES.CHIP 1/16W 820 OHM
I1A1	CK39891R	MM1631XJBE	R169	0790036R	RES.CHIP 1/16W 820 OHM
I1P1	CK51331R	TK11100CS	R170	0790036R	RES.CHIP 1/16W 820 OHM
I1P2	CK51331R	TK11100CS	R181	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
I3J1	CK37218R	MONO IC TK11150CSCL	R181	0790014R	RES.CHIP 1/16W 18 OHM
I3M1	CK50027R	DIGITAL MONOLITHIC IC (MAX202I)	R1A1	AQ00362R	RES.CHIP 1/16W 2.2K OHM TAPE
IRJ1	CK38325R	DIGITAL MONOLITHIC IC (SN74LVC)	R1A2	AQ00362R	RES.CHIP 1/16W 2.2K OHM TAPE
IRJ2	CK38325R	DIGITAL MONOLITHIC IC (SN74LVC)	R1A3	AQ00362R	RES.CHIP 1/16W 2.2K OHM TAPE
ITJ1	CK37605R	IC TK11250CM	R1A5	AQ00362R	RES.CHIP 1/16W 2.2K OHM TAPE
			R1A6	0790064R	RES.CHIP 1/16W 100K OHM
		COILS	R1A7	0790064R	RES.CHIP 1/16W 100K OHM
L101	BM00241R	CHOKE COIL-CHIP (TYPE RC04)	R1A8	0790037R	RES.CHIP 1/16W 1.0K OHM
L102	BM00241R	CHOKE COIL-CHIP (TYPE RC04)	R1A9	0790037R	RES.CHIP 1/16W 1.0K OHM
L3M1	BA00894R	LBC2518 CHIP COIL 100UH	R1C1	0790063R	RES.CHIP 1/16W 82K OHM
LTJ1	BA02244R	HCC102J32CT	R1C2	0790063R	RES.CHIP 1/16W 82K OHM

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
R1C3	0790037R	RES.CHIP 1/16W 1.0K OHM	RR23	0790064R	RES.CHIP 1/16W 100K OHM
R1C4	0790037R	RES.CHIP 1/16W 1.0K OHM	RR24	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
R1C5	0790028R	RES.CHIP 1/16W 220 OHM	RR25	0790064R	RES.CHIP 1/16W 100K OHM
R1C6	0790028R	RES.CHIP 1/16W 220 OHM	RR26	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
R1C7	AQ00362R	RES.CHIP 1/16W 2.2K OHM TAPE	RR27	0790064R	RES.CHIP 1/16W 100K OHM
R1C8	0790024R	RES.CHIP 1/16W 100 OHM	RR28	0790064R	RES.CHIP 1/16W 100K OHM
R1C9	0790024R	RES.CHIP 1/16W 100 OHM	RR31	0790064R	RES.CHIP 1/16W 100K OHM
R1E1	AQ00234R	RES.CHIP 1/16W 33K OHM TAPE	RR32	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R1E2	AQ00234R	RES.CHIP 1/16W 33K OHM TAPE	RRJ1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R1E3	AQ00225R	RES.CHIP 1/16W 15K OHM TAPE	RRJ2	0790028R	RES.CHIP 1/16W 220 OHM
R1E4	AQ00225R	RES.CHIP 1/16W 15K OHM TAPE	RRJ3	0790028R	RES.CHIP 1/16W 220 OHM
R1E5	0790044R	RES.CHIP 1/16W 3.3K OHM	RRJ4	0790056R	RES.CHIP 1/16W 27K OHM
R1E6	0790044R	RES.CHIP 1/16W 3.3K OHM	RRJ5	0790028R	RES.CHIP 1/16W 220 OHM
R1E9	0790037R	RES.CHIP 1/16W 1.0K OHM	RRJ6	0790028R	RES.CHIP 1/16W 220 OHM
R1F1	0790037R	RES.CHIP 1/16W 1.0K OHM	RRJ7	0790012R	RES.CHIP 1/16W 12 OHM
R1H1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RRJ8	0790015R	RES.CHIP 1/16W 22 OHM
R1H2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RRJ9	0790021R	RES.CHIP 1/16W 56 OHM
R1P1	AQ00261R	RES.CHIP 1/16W 330K OHM TAPE	RRK1	0790012R	RES.CHIP 1/16W 12 OHM
R1P2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RRK2	0790031R	RES.CHIP 1/16W 330 OHM
R1P3	AQ00241R	RES.CHIP 1/16W 56K OHM TAPE	RRK3	0790064R	RES.CHIP 1/16W 100K OHM
R1P4	AQ00241R	RES.CHIP 1/16W 56K OHM TAPE	RRK4	0790059R	RES.CHIP 1/16W 47K OHM
R1P5	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RRK5	0790024R	RES.CHIP 1/16W 100 OHM
R1P6	AQ00261R	RES.CHIP 1/16W 330K OHM TAPE	RRK6	0790012R	RES.CHIP 1/16W 12 OHM
R1X2	0790016R	RES.CHIP 1/16W 27 OHM	RRK7	0790012R	RES.CHIP 1/16W 12 OHM
R1X3	0790016R	RES.CHIP 1/16W 27 OHM	RRK8	0790031R	RES.CHIP 1/16W 330 OHM
R1X4	0790016R	RES.CHIP 1/16W 27 OHM	RRK9	0790015R	RES.CHIP 1/16W 22 OHM
R3J1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RRL1	0790021R	RES.CHIP 1/16W 56 OHM
R3M2	0790037R	RES.CHIP 1/16W 1.0K OHM	RRL2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R3M3	0790037R	RES.CHIP 1/16W 1.0K OHM	RTJ1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R3M4	0790037R	RES.CHIP 1/16W 1.0K OHM	RTJ4	0790037R	RES.CHIP 1/16W 1.0K OHM
R3M5	0790037R	RES.CHIP 1/16W 1.0K OHM	RTJ5	0790059R	RES.CHIP 1/16W 47K OHM
R3M6	0790037R	RES.CHIP 1/16W 1.0K OHM	RTJ7	0790024R	RES.CHIP 1/16W 100 OHM
R3M7	0790037R	RES.CHIP 1/16W 1.0K OHM			
R3M8	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			SWITCHES
R3M9	0790037R	RES.CHIP 1/16W 1.0K OHM	S900 △1	FG00251	POWER SW SPW02N02SY17-2-1(U1D1
R3N1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	SNC1	FB00023R	CHIP PUSH SWITCH
R3N2	0790037R	RES.CHIP 1/16W 1.0K OHM	SNC2	FB00023R	CHIP PUSH SWITCH
R3N3	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	SNC3	FB00023R	CHIP PUSH SWITCH
R3N4	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	SNC4	FB00023R	CHIP PUSH SWITCH
R3N6	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	SNC5	FB00023R	CHIP PUSH SWITCH
R3N7	0790037R	RES.CHIP 1/16W 1.0K OHM	SNC6	FB00023R	CHIP PUSH SWITCH
RNC1	0790051R	RES.CHIP 1/16W 10K OHM	SNC7	FB00023R	CHIP PUSH SWITCH
RNC2	0790046R	RES.CHIP 1/16W 4.7K OHM			
RNC3	0790043R	RES.CHIP 1/16W 2.7K OHM			CRYSTAL, FILTERS
RNC4	0790039R	RES.CHIP 1/16W 1.5K OHM	X101	BK10323R	CERAMIC FILTER NFM2012P13C105F
RNC5	0790037R	RES.CHIP 1/16W 1.0K OHM	XTJ1	BK10324R	CERAMIC FILTER NFM2012P13C105BT1
RNJ1	0790069R	RES.CHIP 1/16W 270K OHM	XTJ2	BK00213R	CERAMIC FILTER LFA20-2A1E473MT
RNJ2	0790069R	RES.CHIP 1/16W 270K OHM	XTJ3	BK00213R	CERAMIC FILTER LFA20-2A1E473MT
RNJ5	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE			
RNL1	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			CONNECTORS, JACKS
RNL2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	J3M1	EQ00771	JACK
RNL3	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JNJ1	EU01352	TERMINAL S*3P T-355971-01
RNR0	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JR01	EQ00721	JACK
RR01	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	JR02	EQ00732	JACK
RR02	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	JRJ1	EQ00741	JACK
RR03	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	JRJ2	EQ00741	JACK
RR04	0790069R	RES.CHIP 1/16W 270K OHM	JSW	EA02231R	8P 0.45 PITCH SOCKET 3234
RR05	0790069R	RES.CHIP 1/16W 270K OHM	PANT	2902262	PLUG PIN SUB MINI 3P
RR06	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	PCS1	EA02334R	14P 1.0MM PITCH CONNE. 501331-
RR07	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	PFT	EA02183R	13P SMT ZH CONN. POST
RR08	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	PPU1	ED02812	6P VH CONNECTOR PLUG #2
RR09	0790069R	RES.CHIP 1/16W 270K OHM	PPU2	ED02801	2P PLUG PIN
RR10	0790069R	RES.CHIP 1/16W 270K OHM	PSW	ED02811	8P VH PLUG PIN
RR11	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	PTF	EA02183R	13P SMT ZH CONN. POST
RR12	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	PTS1	EA02241R	CPC68FP0R5H
RR13	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	PTS2	EA02322R	3P 1.0MM PITCH CONNE. 501331-0
RR14	0790069R	RES.CHIP 1/16W 270K OHM	PTW	ED01076	PLUG
RR15	0790069R	RES.CHIP 1/16W 270K OHM	PWT	ED01056	CONNECTOR
RR16	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE			
RR17	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE			MISCELLANEOUS
RR18	AQ00164R	CHIP RESISTOR 1/16W 75OHM TAPE	N101	NA75381	DW1 TERMINAL SUP MTL
RR19	0790069R	RES.CHIP 1/16W 270K OHM	NF902	FP00031R	FUH5R3X50T TP00351
RR20	0790069R	RES.CHIP 1/16W 270K OHM	UTJ1	HC00641	ENGE6401DF
RR21	0790064R	RES.CHIP 1/16W 100K OHM	WTJ1	2784381M	0.60MM TAPED JUMP.WIRE
RR22	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE	#B	JA05986	PSB DW1-U TERMINAL

PRODUCT SERVICE NOTE: Components marked with a △ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION
		FINAL ASS'Y
		SPEAKERS
SPB	GM01631	SPEAKER UNIT
SPL	GM01621	SPEAKER UNIT
SPR	GM01622	SPEAKER UNIT
		MISCELLANEOUS
#908	NA75392	DW1 MAIN HEATSINK
#909	MC00707	HEAT SINK GEL SHEET
#910	MJ04025	SCRW M3S_3*12PN+LSK
#912	MJ03963	SCRW M3E 3*8PN+LSK
A01	DD00672K	FPF42C128128UD-85
A02	TS06021	FPF28R-LGC45H
A03	TS06022	FPF28R-PSP010
A04	TS06023	FPF28R-SCWM3
EANT	HP01241	ANT SW MODULE
U1	HA01571	POW-LSEP1198A1HB (POWER UNIT)
		CONNECTORS
E900	EP00341	PJD-ACINNLET 10DKDG3
E902	EF23854	2J VT CONNECTOR 180MM
E903	EF23842	CO-01T-F0R0-900-SRT
EAN	2973704S	CONNE.3P L=330
ECN23	EF21623	10P VH CONNECTOR L=261MM #2
ECN6	2908838	9J PH CONNECTOR 200MM
EDS	EW08491	30P LVDS CABLE L=440MM
EDV	EW08443	4J DV CABLE L=600MM WITH EARTH
EFT	EF23883	13J ZH CONNECTOR 1000MM
EPS1	2973975S	CO-12C-C2R5-361
EPS2	EF24681	5J VH CONNECTOR 300MM
EPU1	EF21564	6P VH CONNECTOR L=180MM #2
ESC	EF24741	30J 1MM PITCH CONNE. 501189 10
ESPL	EF24691	5J EH-SMPX2 CONNECTOR 470MM
ESPR	EF24701	6J EH-SMPX2 CONNECTOR 820-560M
ESU	2973823S	CO-07C-C2R5-301
ESWVL	EW08431	8P PLUG CODE L=150MM
ETS1	EK01768	PRW68FC0R5-151-2896
ETS2	EF24731	3J 1.0MM PITCH CONNE. 501330 4
ETU1	EF23893	CONNECTOR PINPLUG 2.5C VV 370MM
ETU2	EF23895	CONNECTOR PINPLUG 2.5C-VV 560MM
ETU3	EF23895	CONNECTOR PINPLUG 2.5C-VV 560MM
EUSB	EW08453	4J USB CABLE L=670MM WITH EART
		ACCESSORIES
E01	EV01841	POWER CORD 125V10A UL/CSA
E201	EY01641	PJX-IR BLASTER DP2X
E202	EY01641	PJX-IR BLASTER DP2X
E203	FQ00021	DRY BATTERY(R6P-AA)
E204	FR00061	DRY BATTERY R03(AB) E T (ONLY 42HDX62)
ESWVL	EW08431	8P PLUG CODE L=150MM
N01	QR64861	42HDX62 INSTRUCTION BOOK
N01	QR64862	42HDT52 INSTRUCTION BOOK
N01	QR64863	42HDS52 INSTRUCTION BOOK
N03	QR64871	42HDX62 EASY GRAPHIC GUIDE
N03	QR64872	42HDT52 EASY GRAPHIC GUIDE
N03	QR64873	42HDS52 EASY GRAPHIC GUIDE
N04	3611877	POLYETHLENE COVER
N09	MS00931	CLEANING CLOTH
N202	H463073	PLASMA TV WARRANTY CARD USA
N203	QT44791	PLASMA WARRANTY CARD CANADA (ONLY 42HDS52)
U01	HL02065	REMOTE CONTROL UNIT CLU-3851WL
U01	HL02066	REMOTE CONTROL UNIT CLU-3852WL (ONLY 42HDS52)
U02	HL01864	RCT- CLU123S (ONLY 42HDX62)

SYMBOL	PART #	DESCRIPTION
		P. W. B.
A02	TS06021	FPF28R-LGC45H(LOGIC BOARD)
A11	UE24721	DW1-UA CHASSIS ASSY **(42HDT52 / 42HDX62)**
A11	UE24722	DW1-UB CHASSIS ASSY **(42HDS52)**
A21	JP08521	DW1-U TERMINAL PWB
A11	JP08511	DW1-U DIGITAL SUB PWB
A21	JP08531	PSA DW1-UA MAIN-DIGITAL **(42HDT52 / 42HDX62)**
A21	JP08532	PSA DW1-UB MAIN-DIGITAL **(42HDS52)**
U1	HA01571	POW-LSEP1198A1HB (POWER UNIT)

PANEL BOARDS

42HDS52/42HDT52/42HDX62

FPF28R-ABL0019 ABUS-L BOARD
FPF28R-ABR0020 ABUS-R BOARD
FPF28R-LGC00450 LOGIC BOARD
FPF28R-XSS0026 X SUS BOARD
FPF28R-YSS0027 Y SUS BOARD

QUICK REFERENCE PARTS LIST
IC'S & UNITS

No.	Symbol	P#	Description	Function	PWB ASSY	Remarks
1	A21	JP08531	PSA DW1-U MAIN-DIG. (42HDT52/42HDX62)	MAIN DIGITAL ASS'Y	MAIN DIGITAL	
2	A22	JP08532	PSA DW1-U MAIN-DIG. (42HDS62)	MAIN DIGITAL ASS'Y	MAIN DIGITAL	
3	DN01	CC02061R	LIGHT EMITTING DIODE SML-020ML	LED	LED	
4	E901	EP00341	PJD-ACINLET 10DKDG3S	AC NOISE FILTER	SW	
5	EANT	HP01241	ANT SW MODUL	ANT SWITCH BOX	FINAL ASS'Y	
6	HN30	CZ01271R	REMOCON MODULE(RPM5538-H12)	IR RECEIVER	LED	
7	HN31	CZ01261R	IRDA MODULE IC (RPM871-H12)	IR RECEIVER	LED	
8	I101	CK39882U	MM1630CQ	VIDEO SELECTOR IC	TERMINAL	
9	I1A1	CK39891R	MM1631XJBE	AUDIO SELECTOR IC	TERMINAL	
10	I1P1	CK51331R	TK11100CS	ADJUSTABLE POSITIVE LOW DROPOUT REGULATOR IC	TERMINAL	
11	I1P2	CK51331R	TK11100CS	ADJUSTABLE POSITIVE LOW DROPOUT REGULATOR IC	TERMINAL	
12	I3J1	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
13	I3M1	CK50027R	DIGITAL MONOLITHIC IC (MAX202IPW)	DUAL RS-232 LINE DRIVER/REC W/+-15KV ESD PROTEC	TERMINAL	
14	I401	CK51361R	TAS5508PAG	8 CHANNEL DIGITAL AUDIO PWM PROCESSOR	SUBDIGITAL	
15	I402	CK50471R	DIGITAL MONOLITHIC IC (TAS5122)	30W STEREO DIGITAL AMPLIFIER POWER STAGE	SUBDIGITAL	
16	I403	CK07141R	ANALOG MONO. IC (BA4558F-E2)	DUAL OPERATIONAL AMPLIFIER	SUBDIGITAL	
17	I404	CK07141R	ANALOG MONO. IC (BA4558F-E2)	DUAL OPERATIONAL AMPLIFIER	SUBDIGITAL	
18	IM02	CK50961R	SN74CB3T3306DCUR	DUAL FET BUS SWITCH	SUBDIGITAL	
19	IM03	CK38326R	IC SN74LVC1G32DCKR	SINGLE 2-INPUT POSITIVE-OR GATE	SUBDIGITAL	
20	IN31	CK38324R	DIGITAL MONOLITHIC IC (SN74LVC1G14DCK)	SINGLE SCHMITT-TRIGGER INVERTER	LED	
21	IN32	CK38325R	DIGITAL MONOLITHIC IC (SN74LVC1G17DCK)	SINGLE SCHMITT TRIGGER BUFFER	LED	
22	INM1	CK50051R	MAX4788EXS-T	50mA/100mA CURRENT-LIMIT SWITCHES	SUBDIGITAL	
23	IP05	CK52131R	ANALOG MONOLITHIC IC(VT221H)	INTEGRATED STEP DOWN SWITCHING REGULATOR	SUBDIGITAL	
24	IP11	CK50461R	ANALOG MONOLITHIC IC(BA6287F)	REVERSIBLE MOTOR DRIVER	SUBDIGITAL	
25	IP12	CK51331R	TK11100CS	ADJUSTABLE POSITIVE LOW DROPOUT REGULATOR IC	SUBDIGITAL	
26	IP15	CK51571R	ANALOG MONOLITHIC IC(TK11891F)	5V TO 9V STEP UP CONVERTER	SUBDIGITAL	
27	IPG1	CK33543R	ANALOG MONOLITHIC IC(PST9227N)	SYSTEM RESET IC	SUBDIGITAL	
28	IPS1	CK52141R	ANALOG MONOLITHIC IC(SC4517AIMSTRT)	STEP DOWN SWITCHING REGULATOR	SUBDIGITAL	
29	IRJ1	CK38325R	DIGITAL MONOLITHIC IC (SN74LVC1G17DCK)	SINGLE SCHMITT TRIGGER BUFFER	TERMINAL	
30	IRJ2	CK38325R	DIGITAL MONOLITHIC IC (SN74LVC1G17DCK)	SINGLE SCHMITT TRIGGER BUFFER	TERMINAL	
31	IS02	CK51111R	BD37A41FVM	VOLTAGE DETECTOR IC W/ WATCHDOG TIMER	SUBDIGITAL	
32	IS03	CK50991U	M306H3MC-067FP	TV SUB μCON	SUBDIGITAL	
33	IS05	CK50951R	SN74CB3T3125PWR	QUADRUPLE FET BUS SWITCH	SUBDIGITAL	
34	IT01	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	SUBDIGITAL	
35	IT02	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	SUBDIGITAL	
36	IT04	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	SUBDIGITAL	
37	IT05	CK51131R	UPC2711TB	5V MMIC WIDEBAND AMPLIFIER	SUBDIGITAL	
38	IT06	CK51151R	UPC3221GV	5 V AGC AMPLIFIER	SUBDIGITAL	
39	IT07	CK51141R	UPC3220GR	CATV OUT-OF-BAND TUNER	SUBDIGITAL	
40	IT08	CK51121U	THEATER313	DIGITAL RECEIVER	SUBDIGITAL	
41	IT09	CK37211R	MONO IC TK11118CSCL	1.8 V VOLTAGE REGULATOR W ON/OFF SW	SUBDIGITAL	
42	IT13	CK50071R	TPS62040DGQR	HIGH EFFICIENCY STEP DOWN CONVERTER	SUBDIGITAL	
43	ITJ1	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
44	IV01	CK51091R	SN74LVC1G3157DCKR	SINGLE-POLE, DOUBLE-THROW ANALOG SW	SUBDIGITAL	
45	IV02	CK51632R	9DR32DW8-1046	IR BLASTER	SUBDIGITAL	
46	IV03	CK38328R	IC SN74LVC1G125DCKR	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SUBDIGITAL	
47	IV04	CK51591R	WM8521H9GED/RV	STEREO DAC WITH INTEGRATED OUTPUT STAGE	SUBDIGITAL	
48	IV05	CK38328R	IC SN74LVC1G125DCKR	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SUBDIGITAL	
49	IW01	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	SUBDIGITAL	
50	IW02	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
51	IW03	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
52	IW04	CK38327R	DIGITAL MONOLITHIC IC (SN74LVC1G86DCKR)	SINGLE 2-INPUT EXCLUSIVE-OR GATE	SUBDIGITAL	
53	IW05	CK51161R	PI5C32X245BEX	16-BIT, 2-PORT BUS SWITCH	SUBDIGITAL	
54	IW06	CK38378R	DIGITAL MONO IC SI-3012KM	1 A, LOW DROPOUT, 1.28~15 V REGULATOR	SUBDIGITAL	
55	IW07	CK38326R	IC SN74LVC1G32DCKR	SINGLE 2-INPUT POSITIVE-OR GATE	SUBDIGITAL	
56	IW08	CK38917R	DIGITAL MONOLITHIC IC (SN74LVC32APWR)	QUADRUPLE 2-INPUT POSITIVE-OR GATES	SUBDIGITAL	
57	IW09	CK36321R	SN74LVC125APW	QUADRUPLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SUBDIGITAL	
58	IW10	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
59	IW11	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
60	IW12	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
61	IW13	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
62	IW14	CK08271R	DIGITAL MONOLITHIC IC (SN74LVC244PW)	OCTAL BUFFER/DRIVER WITH 3-STATE OUTPUTS	SUBDIGITAL	
63	IXJ1	CK51331R	TK11100CS	ADJUSTABLE POSITIVE LOW DROPOUT REGULATOR IC	SUBDIGITAL	
64	JNM1	EY01771R	SD MEMORY CARD 54794-0978	MEMORY CARD JACK	SUBDIGITAL	
65	U1	HA01571	POW-LSEP1198A1HB	POWER UNIT	POWER	
66	UT01	HJ00541	ENV56N01D5F	DIGITAL TUNER	SUBDIGITAL	
67	UTJ1	HC00641	ENGE6401DF	ANALOG TUNER	TERMINAL	

CH 1

HITACHI